

BRITISH WEST INDIAN SLAVERY
1750-1834

British West Indian Slavery, 1750-1834

The Process of Amelioration

J. R. WARD

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CONTENTS

FIGURES	viii
TABLES	ix
ABBREVIATION AND NOTE ON CURRENCIES	xi
✓1. Introduction	i
✓2. Establishing the Monoculture	8
3. The Planters in Adversity, 1763-1834	38
4. New Husbandry	61
5. Demographic Results	119
6. A Balance Sheet of Amelioration	190
7. The Aftermath of Slavery	233
8. Conclusion	261
APPENDIX: Slave Listings	280
ENDNOTES	282
BIBLIOGRAPHY	289
INDEX	311

FIGURES

1. The Nineteenth-century Caribbean	xii
2. Sources of British Sugar Imports from the West Indies, 1700-1833	39
3. Sugar Prices and Plantation Profits, 1700-1833	50
4. Early Nineteenth-century Jamaica: Parishes	84
5. Early Nineteenth-century Jamaica: Principal Towns	84
6. Jamaica: Rainfall and Relief	85
7. Seasonality of Slave Deaths, 1751-1789	150
8. Seasonality of Slave Deaths, 1783-1832	151
9. Seasonality of Slave Births, 1751-1789	168
10. Seasonality of Slave Births, 1783-1829	169
11. Productivity of Harvest Field Labour, 1759-1837	197
12. London Price of Muscovado Sugar, 1800-1900	239
13. Sugar Exports from Jamaica, Dominica, and St Lucia, 1830-1889	257

TABLES

1. Proportions of Male Slaves, 1663-1774	32
2. Annual Operating Expenses of a Sugar Estate, c.1750-1830	46
3. Estimated Annual Rates of Profit in British West Indian Sugar Planting, 1749-1834	48
4. Shipments of Capital Equipment and Maintenance Materials to the British West Indies, 1800-1834	53
5. Plant Canes and Ratoons on Four Jamaican Estates, 1759-1834	89
6. Average Sugar Production per Estate Slave, 1739-1834	91
7. Imports of Fish per Slave, 1728-1834	106
8. Provision Grounds in Jamaica, 1751-1829	113
9. Slave Population Structure on Jamaican Sugar Estates, 1750-1829	129
10. Recorded Age-specific Slave Mortality Rates in the Old Colonies: Africans, 1754-1829	133
11. Recorded Age-specific Slave Mortality Rates in the Old Colonies: Creoles, 1737-1829	134
12. Recorded Age-specific Slave Mortality Rates in the New Colonies: Creoles, 1829-1832	137
13. Indicators of Slave Fertility, 1737-1834	138
14. Death Rates in the British West Indies, 1815-1883	142
15. Jamaican Age-specific Mortality Rates, 1817-1881	143
16. Birth Rates in the British West Indies, 1815-1883	144
17. Ratios of Children Aged 0-4 to Women Aged 15-44 in the British West Indies, 1817-1891	145
18. Causes of Slave Deaths, 1751-1832	146
19. Annual Clothing Allowances per Slave, 1713-1833	154

20. Age-specific Fertility Rates, 1754-1884	174
21. Average Intervals between Births to the Same Woman, 1754-1830	178
22. Demographic Indicators for Slaves Employed in Various Crops, 1817-1832	180
23. Age-specific Mortality Rates of Creole Slaves Employed on Coffee and Cotton Estates, 1817-1832	181
24. Occupational Structure of Estate Slaves in the Eighteenth and Nineteenth Centuries	191
25. Average Heights (cms.) of Advertised Jamaican Runaway Slaves, 1813-1834	196
26. Categories of Offences for which Slaves received Punishment, 1754-1830	199
27. Proportions of Advertised Jamaican Runaway Slaves Described as Brand Marked, 1813-1834	206
28. Estate Expenditure on Slave Maintenance and Supervision, c.1750-c.1830	207
29. Average Prices of Sugar and Slaves, 1673-1807	210
30. Jamaican Fish Imports, 1815-1834	223
31. Natural Increase of Slave Populations, 1817-1834	225
32. Seasonal Patterns of Mortality on Jamaican Sugar Estates, 1817-1820 and 1829-1832	227
33. Origins and Occupations of Male Estate Slaves Aged 18+, 1737-1833	228
34. Proportions of Advertised Jamaican Runaway Slaves Described as Scarred by Flogging, 1813-1834	230
35. Exports of Sugar from the British West Indies, 1820-1899	242
36. Retained Imports of Clothing to the British West Indies, 1832-1879	247
37. Retained Imports of Wheat Flour to the British West Indies, 1832-1879	249
38. Slave Mortality and Natural Increase in Jamaica, 1817-1832	285
39. Standardized Mortality on Jamaican Sugar Estates, 1817-1832	286

ABBREVIATION

PRO

Public Record Office

NOTE ON CURRENCIES

Unless stated otherwise, money values are expressed in £s sterling, converted where necessary from colonial currencies at prevailing market rates of exchange.



FIG. 1. The Nineteenth-century Caribbean

Source: J. R. Ward, *Poverty and Progress in the Caribbean 1800-1960* (1985), 8.

Introduction

WHEN the moral basis for black slavery in the Americas came under sustained challenge during the late eighteenth and early nineteenth centuries, slaveholders defended themselves through a variety of arguments. Slavery was a source of national wealth and power; the institution had biblical sanction; it supported social order and 'civilization'; the Africans' 'natural inferiority' required their strict subordination. These points were developed most fully in the southern United States, but they seemed of little value for British West Indian sugar planters, the first important group of slaveowners to be seriously threatened by abolitionist principles. At the same time that anti-slavery gained momentum, Great Britain's internal economic strength was growing rapidly, so it became increasingly difficult to represent distant Caribbean settlements as of vital strategic importance. Evidently sugar planting entailed much harsher conditions than the states of servitude mentioned in the Bible. Planters themselves acknowledged the regular excess of deaths over births among estate populations, claiming that it made the continuation of the slave-trade from Africa essential. The colonists' own newspapers included advertisements for runaway slaves, specifying brand marks and flogging scars. In the United States it might be plausible to emphasize paternalist traditions, 'the southern way of life', and Greek or Roman analogies, but most British West Indian slaves belonged to men who chose to live as absentees in the mother country. Even theories of racial hierarchy failed to carry conviction. Educated metropolitan opinion held, for the time being, that the different races of mankind had been created equal by God.

Thus the West Indian interest's more skilful advocates soon stopped trying to justify slavery on grounds of principle. The very word 'slave', it was often said, affronted traditions of British liberty. The euphemism 'negro' had always been preferred. In

the 1780s one apologist thought that offence might be avoided if the slaves were renamed 'assistant planters'.¹ After the turn of the century a few correspondents, alert to a new idiom, described their gangs as 'the working class'.² Yet, the planters argued, while slaveholding might be wrong, the home government had encouraged the practice. They were therefore entitled to sympathy and patience, especially for their position as masters of primitive Africans. Perhaps discipline was sometimes rather harsh, but firm measures were needed to deal with people who lacked any regular work habits or sense of foresight. As time passed, as the Africans acquired experience, and as the number of West Indian-born slaves increased, the original severities would be relaxed. Reasoning of this kind lay behind the theme of 'amelioration',³ which gained currency from the 1790s as a professed policy for estate management, and as one of the planters' main responses to the anti-slavery movement. Slavery might be disagreeable, but its character was steadily improving, and would continue to do so if the colonies were spared outside interference. Eventually the institution would melt away, just as it had done in England. To show good faith, island assemblies amended the laws regulating slave treatment. The cruellest punishments—dismembering, for example—were prohibited, and minimum feeding standards laid down.

Such measures seemed most likely to reassure the British political élite, conservative by temperament, but proud of its capacity for accommodation and 'improvement'. In any case France's revolution, and slave revolt on the French colony of Saint-Domingue, strengthened feeling against radical schemes. Even the anti-slavery leaders, though sceptical of West Indian intentions, felt able for a while to express belief in the possibility of gradual reform. Their initial attack focused upon the transatlantic slave-trade, and secured its prohibition to British subjects in 1807. The hope was that the planters, no longer able to recruit from Africa, would attend more carefully to the slaves

¹ *Gentleman's Magazine*, lix (1789), 334, quoted by A. J. Barker, *The African Link: British Attitudes to the Negro in the Era of the Atlantic Slave Trade, 1550–1807* (1978), 160.

² Clarendon MSS, Dep. c 360, D. Robertson to J. F. Barham, 14 Dec. 1827. 

³ For early uses of the term in connection with slavery see W. Cobbett, *The Parliamentary History of England, from the Earliest Period to the Year 1803* (36 vols., 1806–20), xxix. 306, xxxii. 990; Bodrhyddan MSS, R. Thomson to Revd W. D. Shipley, 9 May 1798.

which they already had, as a means of establishing natural increase.⁴ The campaigners against the slave-trade

did not aim at an emancipation to be effected by insurrection in the West Indies, or to be ordained precipitately by positive law: but they never denied, and scrupled not to avow, that they did look forward to a future extinction of slavery in the colonies, to be accomplished by the same happy means which formerly put an end to it in England; namely, by a benign, though insensible revolution in opinions and manners, by the encouragement of particular manumissions, and the progressive melioration of the condition of the slaves, till it should slide insensibly into general freedom. They looked in short, to an emancipation, of which not the slaves, but the masters should be the willing instruments.⁵

In 1823, amid growing disappointment at the results of this strategy, the movement for emancipation was reconstituted as a 'Society for the Mitigation and Gradual Abolition of Slavery throughout the British Dominions'. The British government answered parliamentary pressure by undertaking to promote improvements in the slaves' condition, as preparation for freedom at some indefinite time in the future. Yet after a further ten years the policy of amelioration was thoroughly discredited. The consensus had formed that, so long as slavery continued, the West Indies were incapable of any significant change for the better, and Great Britain became the first European nation to embark on a scheme of systematic emancipation in its colonies.

The present study explores the West Indian background to this sequence, with the aim of establishing how much practical success the planters had in improving their regime, and the reasons for the failure of any measures that may have been taken as a safeguard against abolitionism. More generally, it is hoped to increase understanding of the potential for economic development in slave-based societies.

Philosophers of the eighteenth-century Enlightenment were clear that slavery and material progress could not be compatible. The upkeep of slaves, declared Adam Smith, is commonly in the hands of 'a negligent master or careless overseer', acting with a rich man's extravagance. Free labourers can be expected to

⁴ D. B. Davis, *The Problem of Slavery in the Age of Revolution, 1770-1823* (Ithaca, 1975), 410-32.

⁵ [J. Stephen], *Reasons for establishing a Registry of Slaves in the British Colonies* (1815), 8.

maintain themselves much more cheaply and efficiently.⁶ Any magnate will probably be unsuited by upbringing to the persistent concern with detail that is essential for advances in farming.

But if great improvements are seldom to be expected from great proprietors, they are least of all to be expected when they employ slaves for their workmen. The experience of all ages and nations, I believe, demonstrates that the work done by slaves, though it appears to cost only their maintenance, is in the end the dearest of any. A person who can acquire no property, can have no other interest but to eat as much, and to labour as little as possible. Whatever work he does beyond what is sufficient to purchase his own maintenance can be squeezed out of him by violence only, and not by any interest of his own.⁷

These principles supplied much of the intellectual underpinning for nineteenth-century abolitionism. Perhaps slavery had been useful in the first steps towards civilization, but in modern times, by obstructing the free play of reason and self-interest, it confined economic activity to the most rudimentary agriculture, with a degraded work-force, stagnant techniques, and exhausted soils, no basis for the evolution of trade and manufacturing. Later the same points were elaborated by historians of the southern United States,⁸ to represent slavery there as economically moribund in its final phases. L. J. Ragatz followed this approach for the British West Indian sugar colonies by arguing that they were in decay by the later eighteenth century, with planters unable to maintain the fertility of the cane land, or compete with newly developing sources of supply.⁹

Since the 1950s, however, more optimistic views of the results from slave labour have gained currency, in particular through research on the ante-bellum United States. During the decades before the Civil War income per head of population apparently grew as rapidly in the southern slave states as in the free-labour

⁶ A. Smith, *The Wealth of Nations* (1776), bk. I, ch. 8.

⁷ Smith, *Wealth of Nations*, bk. III, ch. 2.

⁸ R. W. Fogel and S. L. Engerman, *Time on the Cross: The Economics of American Negro Slavery* (2 vols., Boston, Mass., 1974), i. 158–90, ii. 168–77; D. B. Davis, *Slavery and Human Progress* (New York, 1984); S. L. Engerman, 'Slavery and Emancipation in Comparative Perspective: A Look at Some Recent Debates', *Journal of Economic History*, xlv (1986), 317–39.

⁹ L. J. Ragatz, *The Fall of the Planter Class in the British Caribbean, 1763–1833* (New York, 1928).

North and West. Furthermore, the southern performance may be attributable to the efficiency of the larger plantations, good management by proprietors, and the slaves' own skill and commitment.¹⁰ Evidence has also accumulated that planters in the British West Indies were by no means so completely negligent and benighted as was once supposed. There is wide agreement that slavery's rigours here were significantly eased during its later years.¹¹ Nevertheless, West Indian innovation often seems rather anomalous—for example, the work of an individual with unusually strong finances¹²—or likely to be defeated by circumstances.¹³

The most vigorous historical debate on British West Indian slavery, set in train by Eric Williams's *Capitalism and Slavery*,¹⁴ deals more with the broad context of emancipation than with the minutiae of planting technique, although assumptions about estate efficiency are involved. Before the appearance of *Capitalism and Slavery* British emancipation was interpreted as primarily a humanitarian impulse: the slaves' sufferings had after all been the main theme of the abolitionists' campaigns. Williams, on the other hand, drawing on Ragatz's analysis of the British West Indies' early nineteenth-century predicament, inferred also that parliament extinguished slavery because the colonies had come to be seen as no longer useful to metropolitan interests. Although philanthropic concern supplied a convenient pretext, emancipation's real purpose was the liquidation of a bankrupt enterprise. The 'Williams thesis' has in its turn been challenged by Seymour Drescher, who shows that anti-slavery's first great success—against the transatlantic slave-trade in 1807—came when the sugar islands' output and share of British overseas commerce were rising.¹⁵ Over the next few decades, up to the

¹⁰ Fogel and Engerman, *Time on the Cross*, i, ch. 6.

¹¹ R. Pares, *A West-India Fortune* (1950), ch. 6; R. B. Sheridan, *Sugar and Slavery: An Economic History of the British West Indies 1623-1775* (Eagle Hall, Barbados, 1974), ch. 16; J. H. Bennett, *Bondsmen and Bishops: Slavery and Apprenticeship on the Codrington Plantations of Barbados, 1710-1838* (Berkeley, 1958); M. Craton and J. Walvin, *A Jamaican Plantation: The History of Worthy Park 1670-1970* (1970), 134; B. W. Higman, *Slave Populations of the British Caribbean, 1807-1834* (Baltimore, 1984), 397.

¹² Craton and Walvin, *Jamaican Plantation*, 187-8.

¹³ W. A. Green, 'The Planter Class and British West Indian Sugar Production, before and after Emancipation', *Economic History Review*, 2nd Ser. xxvi (1973), 448-63; R. B. Sheridan, *Doctors and Slaves: A Medical and Demographic History of Slavery in the British West Indies, 1680-1834* (Cambridge, 1985), ch. 12.

¹⁴ E. Williams, *Capitalism and Slavery* (Chapel Hill, 1944).

¹⁵ S. Drescher, *Econocide: British Slavery in the Era of Abolition* (Pittsburgh, 1977).

time of emancipation, the West Indies' prosperity and relative importance declined, although not just through congenital weakness. Clear opportunities for profit still remained, in the recently acquired colonies of Trinidad and British Guiana at least. Yet development was held back by the labour shortages that resulted from curtailment of the African trade and of inter-colonial slave transfers. In addition, sugar planters were made to carry a much-increased tax burden, another deliberate course of imperial management. So perhaps moral principle proved stronger than self-interest as an influence upon policy. Perhaps British anti-slavery was more a cause than a consequence of British West Indian difficulties.

Nevertheless the original indictment against slavery as a system of production still carries weight. The ante-bellum South may have enjoyed a rapidly growing income, but dispute over the sources of the region's dynamism continues. Were the cotton planters really progressive and innovative? Did their slaves constitute an expert and highly motivated work-force? Or was southern prosperity adventitious, the result of crop mining on an open frontier and rapid growth in demand for the export staple?¹⁶ Similar points may apply in Caribbean sugar planting. The strongest evidence for resilience from the later years of slavery comes with the cultivation of rich, newly cleared fields—in Trinidad, British Guiana, and Cuba—or with exceptional trading opportunities. For example, during the 1790s the British West Indies as a whole were able to prosper in consequence of the slave rebellion which devastated Saint-Domingue, their main rival on European markets.¹⁷

With these wider issues in mind we shall investigate the attempts made to improve slave treatment by British West Indian sugar planters. Our attention will be concentrated mainly on Barbados, the Leeward Islands, and Jamaica, England's first important Caribbean colonies, occupied in the seventeenth

¹⁶ For the debate over Fogel and Engerman's *Time on the Cross* see R. W. Fogel and S. L. Engerman, 'Explaining the Relative Efficiency of Slave Agriculture in the Ante-bellum South', *American Economic Review*, lxxvii (1977), 275–96, and comments by T. L. Haskell, *et al.*, *American Economic Review*, lxix (1979), 206–26.

¹⁷ S. Drescher, 'The Decline Thesis of British Slavery since *Econocide*', *Slavery and Abolition*, vii (1986), 13; R. J. Scott, 'Explaining Abolition: Contradiction, Adaptation and Challenge in Cuban Slave Society, 1860–1886', *Comparative Studies in Society and History*, xxvi (1984), 83–111.

century. Despite later territorial gains within the region, at emancipation the 'old islands' still accounted for two-thirds of the British West Indies' slave population,¹⁸ and their reputation had done most to form metropolitan views on slavery. Also they provide some unusually well-documented histories of estates which had to contend over the long term with a deteriorating commercial environment and limited natural resources. (Barbados was more or less fully settled by 1700, the Leeward Islands by 1750, and Jamaica by 1800.) A chance is offered to evaluate slave economies through their experience in adversity. 'Amelioration' includes not only the doctrine or practice so termed in contemporary usage from the 1790s, but also a more loosely defined concern for raising standards of slave maintenance that appears some thirty years before.

It will be argued that British West Indian planters showed a serious concern for innovation, with significant results. Between the 1760s and the early 1830s, measured output per head of population grew as rapidly on the sugar estates as in Great Britain, and it is unlikely that Great Britain's rate of economic development was outstripped anywhere in the world at this time. The growth of British West Indian productive efficiency accompanied a marked improvement in the slaves' material state. To this extent liberal assumptions seem inapposite and abolitionist strictures unfair: slave regimes could be reformed, although the point was not successfully established by the slave-owners in political debate. We must therefore consider both the nature of colonial progress and the reasons why, across the Atlantic, it failed to command respect.

¹⁸ Higman, *Slave Populations*, 74. We shall deal almost exclusively with the sugar estates, which in the later 18th and early 19th centuries held about 80% of the slaves on Barbados and the Leeward Islands, but only 50–60% on Jamaica. Over most of our period sugar tended to displace alternative export crops, although cotton and coffee acquired a local importance from the 1780s. The sugar-planting regime is the best-documented area of British West Indian colonial life during the time of slavery, and was the aspect most widely discussed by contemporaries. For a more comprehensive view, including slaves in other occupations, see Higman, *Slave Populations*.



Establishing the Monoculture

By the mid-eighteenth century the 300,000 inhabitants of the British West Indian colonies had become more exclusively committed to a single economic activity, sugar production for export, than any population of comparable size in the history of the Americas to that time.¹ During the 1620s and 1630s English adventurers had made their first permanent settlements on a few small islands in the eastern Caribbean—Nevis, St Kitts, Antigua, and Montserrat (the Leeward Islands), and Barbados—a neglected fringe of Spain's American empire. Initially they achieved only a modest prosperity, clearing land to grow food for subsistence, with cotton or inferior tobacco as their main cash crops. Then in the later 1640s prospects were quite suddenly transformed, especially on Barbados. At some time about the beginning of the decade sugar production was introduced to the island, apparently by Dutch traders connected with Brazil. Over the previous century the Portuguese colony in north-eastern Brazil had become the main supplier of sugar to Europe. This attracted the Dutch, who by the 1630s had achieved military control through much of the region and a strong position in the sugar industry's shipping and finance. It seemed that the business might be profitably spread elsewhere, and in any case from 1645 the Dutch were compelled to seek another centre for their activities by the revolt that broke out among the Portuguese colonists.

As a possible new sugar colony Barbados was at this time quite unrivalled: the possession of a tolerant European power, unlike Spanish or Portuguese America; reasonably well settled and secure from outside attack, unlike the English Leewards or

¹ The standard accounts of the early British West Indies are C. and R. Bridenbaugh, *No Peace beyond the Line: The English in the Caribbean 1624-1690* (New York, 1972); R. S. Dunn, *Sugar and Slaves: The Rise of the Planter Class in the English West Indies, 1624-1713* (1973); Sheridan, *Sugar and Slavery*.

the French islands; and with ideal soil and climate, unlike the United Netherlands' own West Indian acquisitions. With the Dutch and even some Portuguese-Brazilians on hand to provide technical assistance, sugar-cane could easily be planted in fields that had previously been cleared for other purposes, and with consignments of sugar to Europe disrupted by the events in Brazil there was a powerful incentive to do so. However, economic change brought a social revolution. The crops of the pioneering phase could be raised and prepared for market on a small scale, so Barbados in the early 1640s was occupied by several thousand independent cultivators. Sugar production, on the other hand, entails elaborate processing. The cane, after it has been cut, must be passed through rollers to extract the juice, which is then boiled down to the point of concentration at which sugar crystals can form. So a sugar planter needed access to a mill of some kind and a boiling house with its set of cauldrons. It was also advantageous, if not strictly essential, to have a still for converting the molasses and other residues from the sugar making into rum. All this equipment, even in the rather primitive style of the seventeenth century, represented a substantial capital outlay, far beyond the means of the average island smallholder, and for efficient operation it had to be supplied with the annual produce from at least a hundred acres of canefields.

In principle it might have been possible to effect a compromise between the original structure of landholding and the demands of the new crop by building works that could process the canes of several dependent or tenant growers. Such arrangements were found in Brazil, but the English tried them only for a short time.² To secure the best yields each stand of cane must be cut at the particular moment when it reaches maturity and, once cut, must be processed within a few hours, before the juice sours. So if the two spheres of activity were in separate hands, the canefields could suffer from a shortage of processing capacity at the critical time, or the mill and boiling house could stand idle from lack of cane. Perhaps a less authoritarian pattern of social relations than in Brazil made it more difficult for a mill owner to co-ordinate his tributary cane growers.

² C. and R. Bridenbaugh, *No Peace*, 72, 87; Dunn, *Sugar and Slaves*, 65.

For whatever reasons, in the English sugar colonies both functions were soon usually combined under single ownership and control, which on Barbados meant the displacement of many smallholders. Some were persuaded to sell out by the exorbitant land prices generated in the sugar boom, debtors might be foreclosed, and the politically powerful could reinforce economic incentives with harassment or legal chicanery. Often the man who swallowed up his neighbours' farms was simply more astute, fortunate, or well connected than the average. (After their defeat in the Civil War, several royalist gentlemen left England for Barbados during the later 1640s, with the aim of rebuilding their fortunes on sugar.) A few of the dispossessed resigned themselves to wage labour for the new élite, while many more tried their luck elsewhere, in the Leewards, in the expedition of 1655 to conquer Jamaica from the Spaniards, or in the new colony of Carolina on the North American mainland. Between the 1640s and the 1660s the number of landowners on Barbados is said to have fallen from 11,200 to 745, and the number of white men from 18,300 to 8,300. By the 1680s some 200 sugar planters occupied half the island.³

As an influence for property concentration the technical characteristics of sugar production were reinforced by black slavery. The tobacco growers had made considerable use of white indentured servants, mainly young people from England or Ireland, who bound themselves to work for a number of years and were then shipped across the Atlantic for sale to a colonial employer. They might be induced by the fear of destitution at home, a taste for adventure, or the chance of surviving their contracts to prosper as free settlers. For the early colonists the indenture system had the merit of being relatively cheap: £6 could secure a man's labour over a four- or five-year term. An African slave might cost five times this sum, and while the latter served for life rather than a fixed term, high rates of mortality and a general atmosphere of uncertainty made the extra outlay seem unprofitable.⁴ Often slaves could not be obtained at any

³ C. and R. Bridenbaugh, *No Peace*, 83-7; Dunn, *Sugar and Slaves*, 66-103; Sheridan, *Sugar and Slavery*, 128-39.

⁴ C. and R. Bridenbaugh, *No Peace*, 104, 117; Dunn, *Sugar and Slaves*, 68-77.

reasonable price. The Dutch and English contended with Portuguese claims to a monopoly of trade on the African coast, and even when these could be evaded there were further problems. A shipload of slaves was a very costly and perishable investment, which should be sold off with the minimum of delay, preferably to a few substantial buyers at a single port, and Barbados before the 1640s hardly guaranteed such a market.

All this was completely changed after the introduction of sugar. The supply of indentured servants failed to keep pace with the rapid growth in demand for labour, perhaps in part because population growth in England was slackening. At the same time Barbados could no longer offer immigrants the prospect of being able to acquire land cheaply, and sugar was intrinsically more arduous than tobacco or cotton, with gang work under masters inflamed by the fabulous profits to be made from the new crop. Volunteers were soon inadequate, so planters resorted to the use of prisoners from Cromwell's Scottish and Irish campaigns, or other increasingly dubious methods of recruitment, but these could only be temporary expedients, confirming the island's unsavoury reputation. Black slaves, on the other hand, might be brought in no matter how unattractive local life had become. By the mid-century the English and Dutch traders had broken Portugal's ascendancy on the African coast, and the sugar planters offered them a market that could make their business pay. In the 1650s at least 3,000 slaves were reaching Barbados each year, and they accounted for more than half of its population by the end of the decade. So white immigration was further discouraged and the larger proprietors gained a new advantage.⁵

A similar development cycle unfolded in England's other main West Indian colonies, rather later than in Barbados, and with a few local variations. The main difference was the relative weakness of their first phase of yeoman settlement, so that the hegemony ultimately established by the sugar estates became even more complete. For example, the Leewards were caught up in the recurrent warfare between the English and the French.

⁵ C. and R. Bridenbaugh, *No Peace*, 75, 247-9; D. W. Galenson, *White Servitude in Colonial America: An Economic Analysis* (Cambridge, 1981), 120, 124, 149-51, 171-2, 218.

Between 1689 and 1706 all the main English colonies here suffered destructive foreign invasions, from which smallholders found recovery particularly difficult. (Barbados was protected against outside attack by the size of its population and its position slightly to the east and to the windward of the main Caribbean archipelago.) In Jamaica many pioneers perished from disease in the squalor of the original army encampments; others were lured away into buccaneering, or ruined by natural disasters. A special hazard on this island came from the Maroons, groups of runaway slaves who established themselves in the mountainous interior and waged guerrilla warfare on the English settlements. Eventually, in the 1730s, a compromise was reached under which the Maroons' freedom was recognized, while they agreed to give up their attacks and help with the recapture of any future runaways. But in the mean time militia commanders were said to have taken advantage of their authority and the confusion of the times to consolidate their own holdings. By the 1750s about 500 individuals, with more than a million acres between them, had appropriated most of Jamaica's useful land.⁶

Once securely established sugar planting was in general highly profitable, but it had periods of adversity. Barbados benefited during the 1640s and 1650s from the difficulties of Brazil, and the consequent scarcity of sugar in Europe. Later, as sugar planting spread elsewhere in the Caribbean, supply was brought more into balance with demand, and prices fell sharply. By the early eighteenth century the main French settlements—Martinique, Guadeloupe, and Saint-Domingue—were increasing their production rapidly, driving British colonial sugar out of continental Europe, and confining it more and more to the metropolitan market, where the structure of import duties gave it a virtual monopoly. In the 1730s complaints of economic distress from the British West Indies were so loud that parliament was persuaded to reinforce the islands' privileges within the imperial system of regulated trade, hoping that any disadvantage would fall upon the Irish and North Americans. Perhaps of more importance (for the new measures were not systemat-

⁶ C. and R. Bridenbaugh, *No Peace*, 195-229; Dunn, *Sugar and Slaves*, 117-76; Sheridan, *Sugar and Slavery*, 148-233.

ically enforced), the planters stood to gain from the growth of Great Britain's own population and wealth. During the middle decades of the eighteenth century her demand for sugar was running ahead of the productive capacity of the British islands, by this time quite fully settled. In the 1750s London sugar prices were usually at least double their lowest point of the 1730s, and substantially higher than those prevailing in more competitive continental markets.

This development reinforced the colonies' commitment to their export staple and had some other important results. Ever since the introduction of sugar planting, because of the strength of outside finance and the many unpleasant aspects of island life, it had been quite common for estate owners to live in the mother country, leaving their property in the care of attorneys and salaried overseers. However, with the inflation of their income from the 1740s many more planters felt that they could afford the expenses of delegated management, and returned to cut a figure in polite society. By the 1760s perhaps a third of the British West Indies' sugar plantations belonged to absentees, a proportion that was to grow steadily until the early nineteenth century. The ostentatious display of new wealth, and the way in which it seemed to be secured at the expense of the British public (there was not yet much concern for the slaves), began to attract a good deal of unfavourable comment.⁷

Only Barbados, originally the most successful of the sugar islands, failed to share in this revived prosperity, because of a severe deterioration in productive efficiency.⁸ The reasons for the colony's decline are not entirely clear. Barbadians claimed that their land had been worn out by decades of continuous cultivation, but estates elsewhere were able to continue for

⁷ Sheridan, *Sugar and Slavery*, 385-446.

⁸ In Barbados between the 1650s and 1750s the average output of sugar per slave employed on the plantations fell from 15 to 4 cwt., compared with an average of 8-10 cwt. elsewhere in the British West Indies, while the rate of return on estate capital was reduced from about 50 to about 5%. J. R. Ward, 'The Profitability of Sugar Planting in the British West Indies, 1650-1834', *Economic History Review*, 2nd Ser. xxxi (1978), 206-8; Dunn, *Sugar and Slaves*, 28, 64. Barbados came to export a good deal of clayed sugar, which was more fully refined and of greater value by weight than the muscovado that accounted for most of the output from the other British islands. Also on Barbados rum production was relatively more important. But even when account has been taken of these differences it is clear that yields here were unusually depressed by the middle of the 18th century.

generations without suffering in this way, at least not to the same degree. As a rule sugar-cane, with its binding roots and dense vegetation, is ideally suited to conserve the soil upon which it grows. There was also a common belief that, since the natural woodland had been cleared for settlement, less rain fell and the island had become more vulnerable to drought. Yet modern studies of tropical climates show little connection between deforestation and rainfall.⁹

Probably the truth was that Barbados suffered from the consequences of its early success. In the precarious conditions of the seventeenth century the island's unusual density of settlement had been a source of strength; later it became a severe disadvantage. Elsewhere, even when sugar planting was fully developed, there remained areas unsuitable for cultivation—gullies, floodland, or steep hillsides—which helped indirectly to keep the cane-fields in good heart. They could provide fodder for livestock and thus more manure, or fuel for the boiling house, thus sparing for use as compost the crushed cane left after milling. And even if woodland does not cause rain to fall, it can certainly retain moisture for the benefit of adjacent crops. But in Barbados an accommodating geography and the momentum of the seventeenth-century expansion had covered half the island with sugar-cane, setting in motion a process of ecological degeneration. At least one attempted remedy only made matters worse. During the early eighteenth century a new and destructive species of ant was introduced to the island, deliberately according to one account, in an attempt to control the blast (a type of aphid which infested the sugar-cane), or accidentally, according to another, along with a consignment of manure from the South American mainland.¹⁰

Whatever its fortunes, sugar planting entailed a most brutal regime for the slave labour force. In the basic cycle of husbandry cane was usually planted in the autumn, and sometimes also in the spring.¹¹ It came to maturity after about sixteen months, to

⁹ G. B. Hagelberg, *The Caribbean Sugar Industries: Constraints and Opportunities* (New Haven, Conn., 1974), 15; I. J. Jackson, *Climate, Water and Agriculture in the Tropics* (1977), 199.

¹⁰ Bennett, *Bondsmen and Bishops*, 6; F. J. Klingberg (ed.), *Codrington Chronicle: An Experiment in Anglican Altruism on a Barbados Plantation, 1710-1834* (Berkeley and Los Angeles, 1949), 71; Fitzherbert MSS, Barbados Diary of William Fitzherbert, 1770-1, fo. 36.

¹¹ The following account of estate routine is generalized. There were local differences in practice, some of which will be discussed below, ch. 4.

be cut down between January and May or June. Then the stumps remaining might either be dug up and the field replanted, or they were ratooned, that is, left to send up new shoots for harvesting the next year. First ratoons could be expected to produce less sugar than the preceding crop of plant canes, and yields fell progressively year by year as ratooning continued. On the other hand, replanting entailed extra work, so its frequency was dictated in part by the state of labour supplies and in part by soil conditions. Ratoons might be cut profitably several times on very fertile land, but where it was poor even once could be uneconomic. On Barbados in the middle of the eighteenth century at least two-thirds of the canefields were replanted after only a single crop.

The method evolved for this was to dig holes, usually about three feet square and as much as a foot deep, separated from each other by narrow banks of unbroken earth. These holes then received cuttings of cane and whatever manure might be available. The procedure was intended to minimize erosion by wind and rain, an increasingly serious consideration as the original forest cover was destroyed and as canefields were pushed further up hillsides. The holes had to be dug by hand with hoes, often in heavy soils baked hard under the tropical sun. (Ploughs were rarely used.) Because manuring was often left until after the shoots of young cane had begun to appear, and because in any case carts could not be brought through a holed field, the material had to be carried by the slaves in baskets on their heads.¹² Miss Schaw watched them on her visit to St Kitts:

Every ten negroes have a driver, who walks behind them, holding in his hand a short whip and a long one. You will too easily guess the use of these weapons. . . . When they are regularly ranged, each has a little basket, which he carries up the hill filled with the manure and returns with a load of canes to the Mill. They go up at a trot, and return at a gallop, and did you not know the cruel necessity of this alertness, you would believe them the merriest people in the world.¹³

In fact each 'little basket' with its contents might weigh as much as 80 lbs.¹⁴ In the nineteenth century, shortly after emancipation,

¹² Sheridan, *Sugar and Slavery*, 109–10, 140–1.

¹³ *Journal of a Lady of Quality*, ed. E. W. and C. M. Andrews (3rd edn., New Haven, Conn., 1939), 127–8.

¹⁴ J. Stephen, *The Slavery of the British West India Colonies delineated* (2 vols., 1824, 1830),

when some disturbances were provoked among the freed labourers of Dominica by rumours that they were to be re-enslaved, manuring was the task which they recalled most bitterly. A white man was supposed to have said that they 'will work with the dung on their heads and a calabash of victuals in their hands, and the dung running into their victuals'.¹⁵

Apart from holing and manuring, the severest work of a sugar estate came at the harvest, not so much in cutting the cane, but with the weight of materials that had to be moved in the operations which followed. The best eighteenth-century equipment could extract about half the cane juice, so the ton of sugar produced on average each year for every field worker required roughly twenty tons of cut cane. This was transported to the mill, sometimes without any help from animal haulage, and passed piece by piece through the rollers. Then it was necessary to dispose of the crushed residue, known as bagasse or trash. If the planter was fortunate enough to be able to cut firewood for the boiling house (five tons were needed for each ton of sugar made), the bagasse could be carried to litter the cattle pens, ultimately returning to the fields as manure. But with the exhaustion of timber supplies, it came to be needed for fuel, and had to dry in the sun before use at the stoke holes, sometimes in showery weather being transferred several times in and out of specially constructed 'trash houses'.

Not only were such tasks onerous in themselves, but they fitted together in a remorseless annual cycle that was a standing inducement to severity and hard driving. All of its phases were critically interdependent, good results were impossible without exact timing, and it was essential that any disruption to the sequence of operations be made up without delay. Holing was best done in July and August, the early months of the rainy season: before this conditions were likely to be too dry, later they would be too wet. The cane had to be planted, manured, and adequately established before the return of drier weather in November or December. After this there might be a slight

ii. 167-72; J. Davy, *The West Indies before and since Slave Emancipation* (1854), 116. Stephen's first-hand knowledge of West Indian conditions was acquired on St Kitts in the later 18th century.

¹⁵ Despatches relating to the Disturbances in the Island of Dominica, *Parl. Papers*, 1845, xxxi (146), 4. Manuring was usually done during the wettest season of the year, from July to Sept.

respite, with time to undertake general maintenance and prepare the works for the impending crop. One or two days' holiday were taken at Christmas, and then the harvest began. The overriding aim was to compress it as tightly as possible into the early and relatively dry months of the new year, when the canes were at their best, when transport from the fields was easiest, and when the fuel for the boiling house burnt most readily. From April or May wetter weather was likely to disrupt operations, resulting in poorer quality sugar, and if by the end of July it had not been drained and cured sufficiently for consignment to Europe, then further costly delays might follow. From August to early October there was a chance of hurricanes, few ships would venture in West Indian waters, and it was foolish to keep up the vanes of the windmills that powered many works in the smaller islands. It was also important to have a decent interval between the end of crop and the start of holing, to rest the gangs a little with some lighter tasks, particularly in weeding those recently cut cane pieces that were intended for ratoons.

The slaves' basic working day started at dawn, about 5.00 a.m. during the middle months of the year, a little later when the nights were longer, and continued until dusk, with a break of about half an hour for breakfast, and an hour or two at midday. But there were many occasions that could prolong the hours of labour, most notoriously during the sugar harvest. Because speed was so essential, and the processing equipment so costly, in use for only a part of each year, milling and boiling were usually continued round the clock, stopping each week only on Sundays, with arrangements of shifts that gave each slave sixteen or eighteen hours' labour in the twenty-four, or alternate nights on which to sleep. Out of crop there was the burden of grass-picking. Sugar estates required large stocks of cattle and mules, for haulage, for manuring, and in many cases for motive power at the mill, but the canefields were steadily enlarged at the expense of pastures. So at noon or in the evening, once the light was too poor for supervised gang work, the slaves were sent off to collect fodder from roadsides and gullies. Each individual had to meet a quota, and each bundle had to be examined to ensure that the quota was fulfilled. Many overseers would not trouble themselves to make their inspection and allow the grass to be thrown into the cattle pens until the last straggler had

returned. Advantage might also be taken of moonlit nights to carry dung or building materials.¹⁶

Although the slaves were regularly worked to the limits of their strength, rather less care was taken with their feeding. Under the most common arrangement they were allocated land to cultivate at times when estate labour was suspended, usually each Sunday through the year, with one extra day a fortnight out of crop. The system seemed to have many favourable points. It saved the planter trouble and expense, it made desertion less likely by giving the slaves an opportunity to develop their own modest properties, and it offered some insurance against theft. Food grown as part of the general estate economy, belonging to the master, would obviously be vulnerable in societies where slaves were in an overwhelming majority,¹⁷ but they could be expected to make some effort in defence of their own provision grounds. Also slave cultivators could be useful to a sugar magnate as instruments for dislodging small white settlers, by undercutting them in local markets, or plundering their crops under cover of legitimate trade. But there were disadvantages as well. The slaves might be too exhausted or improvident to work their grounds on the days assigned. Individuals, in particular recently imported Africans, often failed to establish separate plots and became dependent labourers for other slaves instead. They were then liable to be cast adrift when food was scarce.

These disadvantages were widely recognized, and instructions to overseers frequently ordered that appropriate precautions be taken: 'give the negroes every Friday afternoon and see they goe in their grounds especially the new negroes and let them have grounds by themselves and not with the old negroes to keep'; the negro that neglects his ground 'must, and shall, be severely flogged'. Some of the earliest island laws concerning the treatment of slaves required masters themselves to maintain areas of food crops as an insurance against emergencies.¹⁸ But it is clear

¹⁶ Stephen, *Slavery*, ii. 11-17, 124; James Ramsay, *An Essay on the Treatment and Conversion of African Slaves in the British Sugar Colonies* (1778), 73-4; Codrington (Antigua) MSS, C2, instructions to attorneys 1715, fo. 24; Monson MSS, Thistlewood Diaries, 29 May 1754, 21 Aug. 1758.

¹⁷ By 1750 slaves comprised about 80% of the population in Barbados and 90% in the other British islands: Galenson, *White Servitude*, 120. But many whites lived in the towns, so in the plantation districts the slave majorities could be even larger.

¹⁸ Codrington (Antigua) MSS, C2, instructions to the manager of Cottin plantation 1715, fo. 29; PRO C. 104/8 (Chancery Masters' Exhibits), M. Clarke to Mr Davey, 11 July

that such stipulations were observed most erratically, and while planters might acknowledge the cases of hardship that resulted, and even be prepared to assist them by making special purchases of food, their interventions were unlikely to be sufficient. The feeling was that regular assistance to those who were particularly unfortunate or careless would encourage the rest of the slaves to neglect their grounds. This consideration did not perhaps apply in the case of a general deficiency caused by adverse weather, but then the planters' own revenues were likely to suffer, so that they would lack the means or the will to provide relief.¹⁹

All these problems were aggravated as sugar growing extended, encroaching on the slaves' allotments or displacing them to marginal land. Sometimes a record of the process survived in the names of the canefields: 'Old Negro Ground Piece', 'Yams' Piece', 'Potato Piece'.²⁰ In Barbados settlement was so dense and sugar took hold so rapidly that provision grounds were probably never of major importance, but even here they had been noticeably curtailed by the early eighteenth century. The slaves 'formerly ... had considerable quantity of provision of their own produce whereas now for some years past they have had nothing but what has been given them by their owners which makes it hard for the Slave and Chargeable to their Masters'. 'It is the greatest misfortune in this Island that few Planters give them a Belly full and the reason is this: their Numb[e]rs are so great and Corn so dear, that they can't afford it ...'²¹ The relatively affluent planters of the Leeward Islands were better able to help their gangs, and began to import foodstuffs on quite a large scale, principally maize from North America and horsebeans from England. In Jamaica, a larger and less intensively settled territory, where free land remained quite abundant, customary arrangements survived. The slaves here were still expected to be more or less self-supporting, although signs of

1759; E. Braithwaite, *The Development of Creole Society in Jamaica 1770-1820* (Oxford, 1971), 133.

¹⁹ Smyth MSS, AC/WO 16(6)c, R. Elbridge (in Jamaica) to J. Elbridge, 3 Mar. 1723, reporting that he is 'foret to buy for all the negroes for plantins will not be fit till May or June'; Tudway MSS, Box 15, Letter Book from England of R[achel] T[udway] 1717-1729. R. Tudway to T. Fenton, 28 Feb. 1718.

²⁰ Monson MSS, Thistlewood Diaries, 25 July 1755, 10 Feb. 1759, 12 Aug. 1765.

²¹ Bennett, *Bondsmen and Bishops*, 37.

strain appeared by the mid-century, with a persistent tendency for provision prices in the local markets to rise.²²

It is impossible to determine with any precision the diet secured by the slaves from these various sources, above all because we have no authentic information about yields from their own grounds and must rely upon indications left by the planters. The allowances mentioned most frequently in Barbados and the Leewards average about one pint a day of 'corn'—either maize ('Indian corn') or millet ('Guinea corn')—and a pound of salted or dried fish a week,²³ but evidently it was imagined that these would be supplemented by the slaves' own efforts. For example, on one estate in St Kitts after a destructive hurricane the manager thought it necessary to double the usual ration.²⁴ In the 1750s and 1760s a Jamaican master aimed to issue daily for each of some recently purchased slaves—who had not yet had time to plant for themselves—one fish and three pints of maize, or two pints of rice, or nine plantains. From Barbados in the early 1770s the daily ration, apparently for individuals without access to grounds, was reported as three pints of maize or two of millet. At about the same time slaves on one of this island's estates were said to get a weekly allowance of six herrings and six pints of corn from their owner, and also 3 lbs. of plantains, eddoes, or other vegetables each day from their own gardens.²⁵ Although such levels of feeding were monotonous and particularly deficient in fats, they would probably, if fulfilled, have come close to meeting a working slave's minimum requirements for energy and protein. It is however unlikely that these standards were regularly met in practice.²⁶

²² Monson MSS, Thistlewood Diaries, regularly record local food prices during the 1750s and 1760s.

²³ Bennett, *Bondsmen and Bishops*, 37–8; Pares, *West-India Fortune*, 353 n. 27; R. Dirks, 'Resource Fluctuations and Competitive Transformations in West Indian Slave Societies', in C. E. Laughlin, jun., and I. A. Brady (eds.), *Extinction and Survival in Human Populations* (New York, 1978), 132–5, 138; K. F. and V. H. Kiple, 'Deficiency Diseases in the Caribbean', *Journal of Interdisciplinary History*, xi, No. 2 (Autumn 1980), 200–5. These and other details of slave rations are averages for adult field workers or estate populations. Children, the incapable, and the elderly received less; privileged individuals received more.

²⁴ Bodrhyddan MSS, J. Queely to Lady Stapleton, 4 Apr. 1773.

²⁵ Monson MSS, Thistlewood Diaries, 14 June 1754, 26 July 1754, 15 June 1755, 12 Dec. 1761, 11 Sept. 1770. Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770–1, fos. 65–6.

²⁶ For food values and nutritional requirements see Dirks, 'Resource Fluctuations',

Most clarity is possible with the rations of fish, virtually all of which were imported and so passed through official records or the planters' books. Statistics of shipments to the main islands suggest an average annual provision of about 30 lbs. for each slave, although individual estates show quite wide variations about this figure. The Codrington and Fitzherbert properties on Barbados took as much as 60 or 70 lbs. per slave, while in Jamaica at Egypt plantation during the 1750s and 1760s the yearly ration averaged only 12 lbs., and at Grange Hill no regular distributions were made at all before the 1780s, the slaves being provided with fish-hooks instead.²⁷ Supplies of grain and vegetables are more difficult to evaluate. In the Leeward Islands imports matched reported allowances quite closely, although their nutritional value could be disputed.²⁸ Corn was often distributed in the grain, and the beans had usually been kiln-dried for storage in tropical conditions. Both needed a good deal of boiling (it was rarely possible to grind them into meal), and often slaves lacked the time, energy, or even sufficient water to do this properly. Instead they parched their rations or ate them raw. According to one report, beans consumed in this way 'impart about as much nourishment to the body as so many bullets'; according to another, they 'never fail making ... [the slaves] Swell, and frequently throws them into Dropsies, Fluxes &c.' 'Like a negro's T—that ate horse-beans', was the simile that came naturally to a Nevis planter when discussing some poorly made sugar.²⁹

Recorded imports for Barbados—about a hundred pints of corn annually per slave—seem grossly deficient even in terms of their volume, although they give a rather erroneous impression here, notwithstanding the island's reputation as the original 'foreign-fed' sugar colony.³⁰ Its planters may have brought in

137-40; K. F. Kiple, *The Caribbean Slave: A Biological History* (Cambridge, 1984), ch. 5; R. N. Bean, 'Food Imports into the British West Indies: 1680-1845', in V. Rubin and A. Tuden (eds.), *Comparative Perspectives on Slavery in New World Plantation Societies* (New York, 1976), 584; P. A. David, *et al.*, *Reckoning with Slavery* (New York, 1976), 261-82.

²⁷ See below, Table 7.

²⁸ PRO, T. 1/493, 498, 502, 507, 509; Naval Office Shipping Lists, Leeward Islands 1772-4; Tudway MSS, Boxes 8-9, 13, Parham plantation accounts and invoices 1689-1775.

²⁹ Dr Collins, quoted by Stephen, *Slavery*, ii. 122; Stapleton-Cotton MSS, Bundle 22, J. Bryan to Lady Stapleton, 4 Nov. 1776; Pares, *West-India Fortune*, 118.

³⁰ Fitzherbert MSS, W1/17, account of imports to Barbados, c.1750; PRO, T. 64/48-9, Naval Office Shipping Lists, Barbados 1772-5.

large quantities of food during their first years of prosperity, but by the eighteenth century they were certainly not able to do so. Despite making the largest proportion of rum to sugar in the West Indies, their land was so exhausted that they lacked the means for bartering with the North Americans on any considerable scale. Instead they tried to get by with plantain walks, as the easiest way to raise food from a limited acreage, and by taking crops of corn between the rows of young cane. No clear indication has been found of the results of these expedients, but they could not have been very productive. The plantain walks were cruelly vulnerable to hurricane and drought, while the sowing of corn with canes was despised elsewhere for wearing out the soil, incubating plant diseases, and giving opportunity for fraud by overseers. Barbadian planters came to be known in the other colonies as the severest of masters, a reputation won in a very competitive field, even though because of their relative poverty and the rather small size of their estates many of them remained on the island. (Resident owners were often claimed to be more careful than the managers employed by absentees.)³¹

There is a good deal more circumstantial evidence that rations were often inadequate. Many of the slaves' characteristic diseases, and much of the regular excess of deaths over births on the plantations, have been plausibly interpreted as the results of malnutrition. An account of Jamaica described 'the mean Shifts to which these poor Creatures are reduced. You'll see them daily about Twelve o'clock when they turn in from work, till Two, scraping the Dunghils at every Gentleman's door for bones.'³² Another sign of a population living close to starvation is given by the effects on the slaves of seasonal variations in the food supply. Some of the main crops planted by the slaves in their grounds—maize, millet, kidney beans ('pigeon peas')—could only be grown successfully after the start of the rainy season in May or June, reaching maturity from September to inaugurate a few months of relative abundance. It is true that plantains, another staple, were gathered through the year, but they yielded poorly during dry weather. Yams might be cultivated for a spring harvest, but

³¹ Monson MSS, Thistlewood Diaries, 26 July 1759, fos. 146–7; S. Martin, 'An Essay on Plantership', in A. Young (ed.), *Annals of Agriculture*, xviii (1792), 240–1; R. B. Sheridan (ed.), 'Letters from a Sugar Plantation in Antigua, 1739–1758', *Agricultural History*, xxxi (1957), 10–11. Martin's work was first published about 1750.

³² C. Leslie, *A New and Exact Account of Jamaica* (Edinburgh, 1739), 322.

as a root crop they required a good deal of labour and relatively deep, fertile soil, and their use seems to have declined with the deterioration of the provision grounds in the first half of the eighteenth century.

So from about January the slaves could not expect to produce much for themselves. However, they were cushioned for a while by the sugar harvest, which brought the opportunity to chew the ripe cane and drink juice from the mill, or even hot liquor in the boiling house. The planter tolerated these perquisites partly because at a time of such frantic activity they would in any case be very difficult to prevent, and partly from a sense that with speed so vital for success they were a price worth paying for an energetic work-force. Thus the slaves had the benefit of a useful dietary supplement:³³

whilst it [the crop] is breaking in, in spite of their hard work, they look extremely well, being allowed to suck the cane juice in Great Quantities, which is reckoned very salubrious. The cattle too, though they at this time work the hardest, look the best from the plenty of cane tops. But as soon as ever the cane are broke, though their hard labour ceases, the negroes all immediately lose their sleekness, and their skin changes from the black into a tinge of yellow.³⁴

The slaves suffered with the end of harvest particularly because it came at the time of year when their own grounds were least productive. Moreover, while there might be a brief interlude of lighter work, by July or August they would be back to cane holing.

The months from June to September were likely to be the most difficult period of the year on a sugar estate. A full illustration of this point comes from the diaries kept by Thomas Thistlewood,* an overseer who worked in western Jamaica during the 1750s and 1760s, mainly on Egypt plantation. They suggest that the seasonal cycle could be more damaging than the sporadic crises caused by drought, hurricane, or naval blockade.³⁵ Thistlewood was only

* See endnote 1.

³³ Dirks, 'Resource Fluctuations', 140-4, 163; K. and V. Kiple, 'Deficiency Diseases', 209-10. Raw sugar is 'rich in iron and the B vitamins'.

³⁴ Fitzherbert MSS, W1/23, J. G. Alleyne (on Barbados) to W. Fitzherbert, c1786.

³⁵ Thistlewood's diaries are among the Monson MSS in the Lincolnshire Archives Office: see below, endnote 1. His record of food prices shows that they were usually higher than average during the summer. They were raised by a severe drought in late 1764 and early 1765, but not by the Seven Years War (1756-62). Thistlewood's district

allowed to begin regular distributions of the herrings supplied by his employer after the end of crop, and sometimes special allowances at this time even ran to a few barrels of rice or flour, or some cash for the purchase of plantains.

[22 August 1758] Now serve every negro a herring, and feed many with rice . . .

[26 August 1758] Encourage the negroes with herrings, Beveridge [a mixture of molasses and water] . . .

[6 September 1759] Gave our Negroes some Beveridge to hearten them up.

Occasionally it was possible to improvise: '[16 August 1763] Shot wild dog, exceeding fat. Negroes ate him.' But such measures were obviously insufficient.

[19 August 1758] Peter fainted away at the hogstyes. Sent him refreshment . . .

[20 August 1758] Peter walked home. Had him nursed up as well as we could . . .

[15 August 1759] Note: Harry and Juno very low, by mere hunger and want . . .

[4 August 1762] Minos brought home faint out of the field. Must feed him and nurse him, I find, and many others I doubt.

Both sickness and mortality ran at double their usual rates through the hungry months, as the slaves ate rotten canes left behind in the fields and unripe provisions from their allotments. Cassava was a special hazard. It had unusual resilience against climatic extremes, grew on poor soil, and might be kept in the ground over long periods as an insurance against hardship, so often it was the only means of sustenance at a time of scarcity. But the most commonly grown variety, which contained prussic

did not experience a major hurricane between 1751 and 1780. These general statements concerning food supplies are subject to local variations, like the earlier account of sugar planting. It may be that the smaller islands of the eastern Caribbean suffered more than Jamaica from external pressures. Thus the Codrington estate on Barbados experienced scarcity in 1746 because of the War of the Austrian Succession (Bennett, *Bondsmen and Bishops*, 38), although on Antigua between 1731 and 1767 the price of imported food does not seem to have been much affected by international conflicts (R. Pares, *Yankees and Creoles: The Trade between North America and the West Indies before the American Revolution* (1956), 114-16). The most fully documented wartime subsistence crises in the British West Indies come from the period of the American War of Independence (1776-82), but this episode had special features: see below, 40-1.

acid, had to be thoroughly washed before it was safe for eating. This might require too much of the desperate or the unwary, in particular recently imported Africans, perhaps from a region where the plant was not known, or men with no experience in the preparation of food.³⁶

[17 October 1756] [Joe] died tonight, just as Zachary did, having eat bitter cassada this afternoon. Gave him warm water and sweet oil, but to no purpose, being too late . . .

[14 August 1758] At night the new negro boy Adam, being almost dead with eating cassada or Manchioneal apples, gave him warm water and oil, and saved his life. He bit the funnel end off, and in wresting open his mouth a tooth broke out.

It seems that hard times also affected fertility. Only a third of the slave births recorded by Thistlewood occurred during the six months from January to June, as a result of conceptions between May and October. A similar pattern is evident on some other Jamaican properties, although it has been interpreted as a consequence of seasonality not in conceptions, but in the incidence of miscarriages. These are assumed to have been particularly common during spring and early summer, with the severe labour of the cane harvest, so that they reduced the number of births over the same period.³⁷ However, a foetus is considered most susceptible to miscarriage during the first months of pregnancy rather than at a later stage,³⁸ and Thistlewood's record of miscarriages shows no seasonal variations. Furthermore, the sexual activity of his slaves seems to have moved in a cycle that is matched by the subsequent pattern of births, with the formation of new partnerships and instances of adultery being more

³⁶ G. Debien, *Les Esclaves aux Antilles françaises (xvii^e-xviii^e siècles)* (Basse-Terre, Guadeloupe, and Fort-de-France, Martinique, 1974), 317, notes that in the French West Indies new slaves were at risk because of their inability to distinguish between wholesome and poisonous crabs.

³⁷ R. S. Dunn, 'A Tale of Two Plantations: Slave Life at Mesopotamia in Jamaica and Mount Airy in Virginia, 1799 to 1828', *William and Mary Quarterly*, 3rd Ser. xxxiv (1977), 62 n. 35.

³⁸ J. Campbell, 'Work, Pregnancy, and Infant Mortality among Southern Slaves', *Journal of Interdisciplinary History*, xiv, No. 4 (Spring 1984), 808-9; Monson MSS, Thistlewood Diaries. Thistlewood kept what seems to have been a complete account of births to the slaves under his supervision between 1751 and 1786. He cannot have recorded their miscarriages and sexual relations so systematically, but, presumably gave some indication of underlying patterns. Forty-six of his 62 references to new partnerships, adultery, or marital disputes among the slaves occur in the months from Nov. to Apr.

frequent than usual in November and December, when locally grown provisions were most abundant, and from January to April, when the sugar harvest was in progress. No doubt the night shift provided an opportunity for many irregular liaisons: '[2 April 1757] Cobbenna [a sugar boiler] caught London [a stoker] and Rosanna (Cobbenna's wife) at work upon London's bed. London got a good thumping as I hear. This was after the coppers done cooling.' But Thistlewood's remarks suggest that the seasonal variations in libido had a dietary basis as well. '[27 February 1751] 'Tis said eating much cane, or drinking much beverage makes a woman so loose and open, as though she has just been concerned with [a] man, and gets many a negro woman a beating from their husbands.' On the other hand Thistlewood learned from personal experience that slave women were more willing to prostitute themselves to white men after the end of the sugar harvest.

Undernourishment also found expression in various kinds of indiscipline. As usual in slave societies, the smallest details of management had to accommodate the problem of theft. Seed corn issued for planting on the estate's account was first soaked in lime water or the juice of aloes so that it should not be edible. A master who tried to keep dogs insisted that they be brought daily and fed before his eyes: otherwise their provisions would certainly be appropriated. Unless the animals themselves were closely watched they too would soon become a dietary supplement for the slaves.³⁹ But an irritating habit could become much more serious during the summer months when the slaves might be driven by hunger to eat the cane in the critical period of its early growth. This could not be allowed the same tolerance as the harvest perquisites, for the wholesale destruction of young shoots would disastrously reduce subsequent yields. Even so it was very difficult to prevent if the gangs were half starved, for they had to be sent through each field two or three times with their hoes to keep down the weeds. Thistlewood understood the causes of cane breaking well enough; sometimes he tried to control it with special allowances. '[19 July 1760] Gave negroes molasses these three days past, yet they destroy cane sadly.' But special punishments were more common. '[25 May 1756] Derby

³⁹ Monson MSS, Thistlewood Diaries, 29 Aug. 1770; Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770-1, fo. 37.

caught by Port Royal eating canes. Had him well flogged and pickled, then made Hector shit in his mouth.' This treatment was subsequently referred to as 'Derby's Dose'.

Running away also became more frequent in the summer, bringing many incidental costs. Labour was lost during the fugitives' absence, and even after their return if they had suffered some particularly severe punishment. As a rule when masters flogged their own slaves they aimed to leave them still capable of work; when they dealt with intruders, other men's property, they need not be so restrained.⁴⁰ Often it was thought necessary to send other slaves in pursuit of a runaway, and rewards or gaol fees might be due, especially if outsiders, usually slaves from neighbouring properties, were credited with the recapture. During a bad year in the 1720s such charges used up most of the rum produced on a Nevis estate. On Antigua later in the century payments averaged about 10 shillings for each returned fugitive, and in Jamaica the Maroons demanded £1 or more.⁴¹ The attempts made by runaways to live off the land aggravated the problem of theft, and on a small island where there was little natural cover they might retire with their cooking pots to the middle of cane pieces, creating a significant fire hazard.⁴²

In these circumstances, planters had to take large numbers of slaves from productive work to stand guard about the estates. Some watchmen were too old or sick for any more strenuous occupation and entailed no great economic loss, yet they could not be expected to contribute much to security. However, the annual cycle of activity suggested a convenient method of reinforcement, at least in the period of most acute stress. Demand for labour was greatest during the harvest and defences had to be reduced; many even of the disabled were used as mill feeders or stokers. So long as the slaves benefited from the sugar juice, the risks of indiscipline were manageable, but after the last cane

⁴⁰ Monson MSS, Thistlewood Diaries, 27 Aug. 1764: 'Egypt Lucy laid up of bad whipping received at Jerusalem estate fifteen days before.' Thistlewood could reciprocate. In May 1751 he gave 150 lashes to one outsider and 250 to another, at a time when 50 was the most common punishment for his own slaves.

⁴¹ E. F. Gay (ed.), 'Notes and Documents: Letters from a Sugar Plantation in Nevis 1723-32', *Journal of Economic and Business History*, i (1928), 157; Tudway MSS, Box 9, Parham plantation accounts 1771-1805; Monson MSS, Thistlewood Diaries, 8 Aug. 1784; Dickenson (Wiltshire) MSS, 469, Barton Isles plantation accounts 1764.

⁴² Tudway MSS, Box 15, Letter Book from Antigua 1759-84, M. S. Walrond to C. Tudway, 2 July 1769.

had been ground more watchmen had to be recruited, and the obvious source was from among those slaves who were no longer needed for the work of processing. At Egypt Thistlewood cut down his guard to a nucleus of four or five invalids during the crop; afterwards he raised it to as many as a dozen, against forty field labourers, by sending out sugar boilers, distillers, and other specialists.⁴³ Similar adjustments were made elsewhere: inventories of Turners Hall estate on Barbados list ten watchmen in July 1780 but only three the following January. A manager on Antigua in the 1760s complained that his estate was under strength because of the number of both runaways and watchmen, 'for we are obliged to watch every piece of canes out of crop'.⁴⁴

As inducements to vigilance these supplementary watchmen had the benefits of privileged status: at least partial exemption from menial tasks, special allowances, and rewards for successful arrests—usually a few small coins or a bottle of rum. A little slackness could be corrected by a day or two with the field gang, where they were not likely to be regarded with much affection.

[2 June 1760] Achilles [a field labourer and habitual runaway] told Daniel [the ranger or principal watchman] that if he did not take care he would cut his head off in the bush—several witnesses . . .

[28 July 1760] Had Daniel digging cane holes as he catches none of our runaways.

In Thistlewood's experience any more serious backsliding by confidential negroes was quite rare. The worst that he ever suffered was prolonged absences by hunters who had been sent out after runaways, and in such cases punishment was ruthless: 100 or 150 lashes at a time, brand marking on the face, or the loss of an ear.

The watchmen themselves were not gentle in their methods:

So many there are who do not give their negroes enough to eat that there are obliged to be a great many watchmen on every estate which are of course the best negroes from there being confidence had in them, and generally when the canes are cut down many dead bodies

⁴³ Monson MSS, Thistlewood Diaries, 23 July 1756, 12 May 1757, 14 Sept. 1758, 30 May 1764, 9 Mar. 1765.

⁴⁴ Fitzherbert MSS, W1/17, Turners Hall inventories; Tudway MSS, Box 15, M. S. Walrond to C. Tudway, 20 Sept. 1767; see also Bennett, *Bondsmen and Bishops*, 12, 16, 29.

are found killed by the watchmen for having forcibly entered, most probably instigated by hunger. A few there may be who are actuated by villainy and these few furnish an excuse for the barbarity exercised on the rest. . . . The men have great cruelty in their disposition, and when they are set as watchmen over the canes or corn they catch any one stealing it, if they do not kill him (being provided with guns and swords) they beat him in the most unmerciful manner.⁴⁵

[25 August 1727] Most of the negroes that dyed kill'd themselves by running away in the hard times. Pompey was cut to pieces stealing of corn but having some proof of it is promis'd payment.⁴⁶

[4 August 1756] Last night Derby attempting to steal corn out of Long Pond corn pieces, was catched by the watchman, and resisting, received many great wounds with a mascheat, in the head, etc. Particularly his right ear, cheek and jaw, almost cut off.⁴⁷

Why did masters bring their slaves to such dire straits, when the price to be paid, through sickness, mortality, and disorder, would seem to have been quite obvious? It has been suggested that at least by the eighteenth century, if not before, severe treatment had become more or less deliberate policy. Planters reckoned that with sugar so lucrative, with food—whether locally grown or imported—relatively scarce and dear, and with the ships from Africa assuring an inexhaustible supply of labour, it was more profitable to rely upon purchasing to maintain or increase the labour force, rather than aim for natural reproduction in the West Indies. Indeed, young children incapable of work might be seen as an encumbrance and actively discouraged. Perhaps earlier, when the slave-trade was not yet securely established, and when a good deal of land still remained for food growing in the islands, planters had not taken so harsh a view.⁴⁸

However, this aspect of management is very difficult to judge. The clearest statements that in the British West Indies it was considered 'better to buy than to breed' come almost without exception from critics of slavery and the slave-trade in the later eighteenth century, especially from witnesses to the parliamentary inquiries of the 1780s.⁴⁹ The few authentic comments on the subject that survive from the planters themselves, usually

⁴⁵ Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770-1, fos. 50, 62.

⁴⁶ Gay, 'Letters from . . . Nevis', 157-8.

⁴⁷ Monson MSS, Thistlewood Diaries.

⁴⁸ Sheridan, *Sugar and Slavery*, 241-4.

⁴⁹ Sheridan, *Doctors and Slaves*, 228, 323-4.

in the form of instructions to their agents, are rather different in tone. According to Mrs Rachel Tudway, writing in 1716:

You must also inform me of all Losses and Crosses of the Deth of any Negros and what are borne. To loose Negros Especially workers are Very great Losses therefore I must Recomend them to your Especial Care and well Looking after them that they may be used as befitts them and not want what they ought to have their bellys full and planting Enough for them, as it is not Good to be Cruell or too severe to them so it is not fitt that they should be Leasy and Suffered to Neglect there worke, but that they be kept to doe there Duty and Labour as they Ought to doe, and will doe if they be well Lookt after at their work and have a Diligent driver that mindes it. I Reley wholly upon you that this may be well performed for from the Negros' Labor all produce must Come.⁵⁰

In 1754 Richard Beckford, the owner of five plantations and more than a thousand slaves in western Jamaica, dealt more specifically with the problem of reproduction:

The many Accidents that happen to lying in Women and to the Infants after their Birth I fear is chiefly owing to ye badness of their houses and their being turn'd out to work too soon. Especial Care therefore must be taken that there be fit and warm houses for ye Reception of ye Women under those Circumstances, and ye Mothers must not be permitted to leave their houses till a reasonable Time after their delivery, and Whilst their Children continue at the Breast their Labour ought to be Slight and Easy and Victuals allow'd them by ye Overseer.⁵¹

But what can be deduced from statements such as these? Intelligent owners were aware of the many influences that led their employees to behave with excessive severity, and it would be natural to pitch the tone of any instructions to counteract them. Even so, perhaps there was still a tacit understanding, too familiar or even too distasteful to be spelled out, that efficient sugar production meant natural decrease among the slaves and regular replacements from Africa; the most that a competent planter could do was to keep these within reasonable bounds.

Only in the case of Thomas Thistlewood, who dutifully copied out Beckford's instructions, do we get any detailed indication of

⁵⁰ Tudway MSS, Box 16, instructions to Mr Thomas Fenton.

⁵¹ Monson MSS, 31/86, Richard Beckford's instructions, fo. 4.

current practice. Twice during the 1750s he ordered the whipping of a parent or guardian when he believed that a young child had died as a result of neglect; on one occasion he recorded that the house occupied by a woman and her new infant was being repaired.⁵² A midwife was sometimes called in to attend deliveries. New mothers got three or four weeks' rest, including sometimes the provision of a wet nurse, before being sent back to the fields. They might also be fortified with presents of rum, sugar, and other delicacies. But women were rarely allowed any time off work before giving birth, and they could be flogged in the last months of pregnancy. So how much of Thistlewood's concern was for the infants and how much for their mothers, as more immediately productive workers? Whether or not a newly born infant survived its first few days of life had no effect upon the length of time allowed to its mother away from field labour. If Thistlewood did wish for an excess of births over deaths on the estate, he was certainly not prepared to go very far in trying to promote it.⁵³

More evidence on this problem is offered by the composition of slave purchases. If planters had little enthusiasm for natural increase, then they might be expected to buy only a small proportion of women. The information about sex ratios summarized in Table 1 apparently suggests the prevalence of anti-natalist attitudes. Males were usually in a majority among purchases or imports, perhaps a growing majority in the later seventeenth and early eighteenth centuries, as sugar planting became more firmly entrenched.⁵⁴ Yet uncertainties still remain. While males decisively outnumbered females in the trade from Africa, they rarely did so on the estates, because of the males' particularly high rate of mortality, double that of females among recent imports. Thus any increase in the proportion of males imported may have occurred not so much as the result of a shift in attitudes against breeding, but because planters learned by

⁵² Monson MSS, Thistlewood Diaries, 18 May 1756, 28 July 1758, 12 July 1759.

⁵³ Monson MSS, Thistlewood Diaries. From the 1760s there was some improvement in Thistlewood's treatment of breeding women. For occasions when women gave birth within a few months after being flogged see 5 Jan. and 3 Apr. 1756 (Hannah), 7 Jan. and 18 May 1756 (Mountain Lucy), although it is not made clear whether their condition was known at the time of punishment. Thistlewood explicitly stated only once, on 23 Feb. 1778, that a woman had been excused a whipping because she was pregnant.

⁵⁴ Sheridan, *Sugar and Slavery*, 243.

TABLE 1. *Proportions of Male Slaves, 1663-1774 (%)*

Island or estate		In island or estate popula- tions	In deliveries from Africa
(1) Barbados	1663-70		52
(2) Antigua	1678	48 ^a	
(3) Barbados	1670-1719		52-72
(4) Nevis	1670-1719		55-69
(5) Jamaica	1670-1719		52-72
(6) Bybrook, Jamaica	1691-1709	52	65
(7) Codrington, Barbados	1710	54	
(8) Barbados	1720-4		84
(9) Jamaica	1720-4		73
(10) Montserrat	1729	53	
(11) Worthy Park, Jamaica	1730	56	
(12) Codrington, Barbados	1710-31		84
(13) Codrington, Barbados	1731	55	
(14) Newton, Barbados	1740	49	
(15) Codrington, Barbados	1741-7	70	75
(16) Spring, Jamaica	1740	49 ^a	
(17) Parham, Antigua	1723-60		60
(18) Parham, Antigua	1750	51	
(19) Turners Hall, Barbados	1753	53	
(20) R. Beckford's estates, Jamaica	1754	48	
(21) Egypt, Jamaica	1754-8		63
(22) Egypt, Jamaica	1760	48	
(23) Dukenfield Hall, Jamaica	1764	52	
(24) Jamaica	1764-74		62
(25) Codrington, Barbados	1731-61		69
(26) Codrington, Barbados	1768	56	
(27) Mountravers, Nevis	1768	52	

^a Adult slaves only.

Sources: (1): Sheridan, *Sugar and Slavery*, 243; (2): Sheridan, *Sugar and Slavery*, 189; (3)-(5), (8), (9): D. W. Galenson, 'The Slave Trade to the English West Indies, 1673-1724', *Economic History Review*, 2nd Ser. xxxii (1979), 246; (6): Helyar MSS, Box 1089, accounts and inventories; (7), (12), (13), (15), (25), (26): Bennett, *Bondsmen and Bishops*, 54-5, 59-60, 73; (10): Sheridan, *Sugar and Slavery*, 173; (11): M. Craton, *Searching for the Invisible Man: Slaves and Plantation Life in Jamaica* (Cambridge, Mass., 1978), 54; (14): Newton MSS, 523/970, deed of S. Newton's estate; (16): Smyth MSS, AC/WO 16(34), inventory; (17), (18): Tudway MSS, Boxes 8, 14, 16, accounts and inventories; (19): Fitzherbert MSS, WI/17, inventory; (20): Monson MSS, 31/86, Richard Beckford's instructions, fos. 35-40; (21), (22): Monson MSS, Thistlewood Diaries; (23): Cooper-Franks MSS, Acc. 775/931, inventory; (24): Sheridan, *Sugar and Slavery*, 243; (27): Pares, *West-India Fortune*, 125.

experience of the sex differential in mortality, or because its effects became more marked when the development of sugar planting raised average mortality rates.⁵⁵

Perhaps also sex ratios among consignments across the Atlantic reflected supply conditions more than the planters' policy. In the later eighteenth century owners sought to account for the excess of males among purchases as dictated by, for example, the custom of polygamy within Africa which pre-empted many females.⁵⁶ On occasion choice could be constrained in the opposite direction, especially when merchants insisted on selling slaves in lots: 'I can't get men negroes here [in Jamaica] without women'.⁵⁷ But although in the slave-trade, with its many uncertainties and extended lines of communication, there may have been occasions when supply did not match exactly with demand, over the long term purchasers seem to have been able to make their wishes felt. Spanish colonists were known to have a strong preference for male slaves, and this was reflected in the deliveries made to them. In the British settlement of Belize unusually large proportions of males were imported for the arduous work of timber cutting.⁵⁸ Where we can follow the experience of individual sugar plantations in detail, the pattern of purchases sometimes seems to be varied at will in pursuit of a particular composition. In 1719 the Parham estate on Antigua had 140 slaves, only 39 per cent of which were male. A list of 1737 records thirty-three recent purchases, thirty

⁵⁵ Bennett, *Bondsmen and Bishops*, 59-60; Dunn, *Sugar and Slaves*, 315-17. According to James Ramsay, writing in 1787, the mortality differential among recently imported Africans occurred because 'the men by reason of their being confined in chains suffer more during the Voyage and are more irregular and careless of themselves than Women . . .': Ramsay MSS, MS Brit. Emp. s. 2, fo. 90. Relatively high male mortality meant that in estate populations there was usually a marked excess of females among the older slaves, with males in a majority over females among young adults roughly in the proportions 55:45 until the early 19th century: Sheridan, *Doctors and Slaves*, 197; and see below, Table 9.

⁵⁶ S. L. Engerman, 'Some Economic and Demographic Comparisons of Slavery in the United States and the British West Indies', *Economic History Review*, 2nd Ser. xxix (1976), 273 n. 2. The pattern of slave deliveries by the Royal African Company provides some support for this suggestion: D. W. Galenson, *Traders, Planters, and Slaves: Market Behavior in Early English America* (Cambridge, 1986), 105-10.

⁵⁷ Helyar MSS, Box 1089, J. Napper to W. Helyar, 13 Mar. 1683.

⁵⁸ N. Deerr, *The History of Sugar* (2 vols., 1949-50), ii. 276-7; H. S. Klein, 'The English Slave Trade to Jamaica, 1782-1808', *Economic History Review*, 2nd Ser. xxxi (1978), 31-2; O. N. Bolland, *The Formation of a Colonial Society: Belize from Conquest to Crown Colony* (Baltimore, 1977), 51, 107.

of them male, which had brought the sexes almost exactly into balance. Then males accounted for between 50 and 60 per cent of the slaves bought up to 1750, so that their share of the estate's population remained virtually unchanged.⁵⁹ In general, the fact that women usually fetched prices very close to those of men at similar ages and levels of skill suggests that the proportions between the sexes achieved on the plantations corresponded more or less to their owners' wishes.⁶⁰

Of course the possibility remains that women were acquired for reasons other than their capacity for procreation. Some planters believed that they were more reliable as workers, and a severe imbalance between the sexes could impair morale and discipline, with the men likely to absent themselves in search of partners on distant properties: 'the negroe Men are craveing for wifes and therefore would advise Girls to be bought ...'.⁶¹ But young children were assigned a positive value in eighteenth-century estate inventories. As infants less than a year old they were appraised at between 5 and 10 per cent of the price of a fully productive adult, very similar to the price structures current in the nineteenth century after the ending of the transatlantic slave-trade, when child rearing was certainly thought to be desirable.⁶²

Probably planters had differing views on the subject; this is suggested by the wide variations in composition that occur between

⁵⁹ Tudway MSS, Box 15, Letter Book 1717-21, R. Tudway to T. Fenton, 18 Apr. 1719; Box 16, 'A List of all the Negroes ... on Parham Plantation ...', 1 Feb. 1737; Box 8, Parham plantation accounts 1742-50; Box 14, inventory of Parham plantations 1750.

⁶⁰ In the British West Indies, as in other plantation regions, females were usually valued, age for age, at 80-90% of males, despite the latter's higher mortality, but this differential seems to have arisen only because males were considered more suitable for training in skilled occupations: Engerman, 'Economic and Demographic Comparisons', 273 n. 2; M. Moreno Friginals, H. S. Klein, and S. Engerman, 'The Level and Structure of Slave Prices on Cuban Plantations in the Mid-nineteenth Century: Some Comparative Perspectives', *American Historical Review*, lxxxviii (1983), 1209-11. The prices of male and female field labourers were virtually identical. See e.g. PRO, CO 243/2, St Kitts slave compensation claims 1707; Tudway MSS, Box 14, inventory of Parham plantations, Antigua 1750. From these and other inventories listed in the Appendix, there is no evidence that relative values in the British West Indies changed over time.

⁶¹ Pares, *West-India Fortune*, 123; Sheridan, 'Letters from ... Antigua', 19 June 1749, 3 Dec. 1752.

⁶² See the inventories listed in the Appendix; Moreno Friginals, Klein, and Engerman, 'Slave Prices', 1213-16 and the references given there. G. W. Roberts, *The Population of Jamaica* (Cambridge, 1957), 221, mentions the clause in Jamaica's slave code of 1696 requiring that pregnant female convicts should not be executed until after their delivery.

individual slave holdings. For example, Richard Beckford apparently favoured natural reproduction, but he owned an unusually large proportion of females. On the other hand the Barbados estates of the Society for the Propagation of the Gospel obviously neglected breeding in the early eighteenth century, but the ratio of men to women on these properties was particularly high, and in 1761 the attorney implied that practice here was rather exceptional by the standards of the island as a whole: 'No certain proportion of the Sexes is in general observed . . . tho 'tis usually judged most eligible to have a superior number of Females', chiefly because of the issue.⁶³ It is nevertheless unlikely that planters on the whole were ever actively hostile to the birth of children, or that most slaves were systematically 'worked to death' as part of a calculated business strategy. Natural reproduction seemed desirable in principle, many of the incidental costs of overwork and underfeeding were widely recognized, and it could even be thought appropriate to take some care of the elderly:

I would advise that all the old Negroes past duty be manumitted, not to starve, for that would be no generous Boon. Let them [remain] on the Estate and be as carefully Cloathed and fed as those that earn their Bread. My aged Horse or Dog that has faithfully spent his Time in my Service I feed and cherish. Dare I then deny that Comfort to one like my self, and to those who have in their younger days spent their strength and Labor faithfully to give me all the Comforts of Life.⁶⁴

Yet why in practice were estate conditions so harsh? No doubt damage was done by incompetence or neglect, especially when estates were left by their owners in the hands of salaried employees. However, on some points the most conscientious planter might have real difficulty in connecting cause with effect. It could be doubted whether easier treatment was the means to secure a higher birth rate, when some of the most active field workers produced the largest number of children.⁶⁵ The heavy mortality which the white men themselves suffered in the

⁶³ See above, Table 1; Klingberg, *Codrington Chronicle*, 47.

⁶⁴ Stapleton-Cotton MSS, Bundle 20, 'Mr Ward's Opinion upon Improvements at St. Kitts', June 1766.

⁶⁵ Although most of the field women supervised by Thistlewood at Egypt were completely barren, over a 13-year period one produced 6 children and another 4. See also Dunn, 'Two Plantations', 61.

Caribbean made it easy to regard losses among the slaves as to some extent inevitable. In the eighteenth century, before the establishment of regular national censuses, there was no general agreement that population increase was part of the natural order of things.⁶⁶ Thus Belgrave's manual of advice, based on experience in Barbados, although recommending that 'your Slaves ought to be eased and encouraged as much as possible', included their depreciation at the annual rate of 5 per cent as an item in its specimen accounts.⁶⁷ An Antiguan manager reported, 'we have been pretty lucky with little negroes this year', because of the seventeen born fifteen had survived, while at the same time the purchase of five or ten new slaves each year was reckoned necessary just to maintain his estate's population at about 500.⁶⁸

Planters were also caught by circumstances and their own ambitions. Even if they recognized that more generous feeding in the summer months could mean better discipline, fewer deaths, and ultimately heavier crops, the costs were immediate and certain while the benefits were future and contingent. It was tempting to gamble, to hope that a little extra vigilance or some luck with the weather would carry the gang through to the next harvest without any additional expense. This course was particularly seductive to men out to make their fortunes, often heavily in debt to supplying merchants, anxious to escape the fever-ridden islands with their lives, exasperated and brutalized by the daily struggle to maintain estate routine. 'Mr Dorrill says, as a Mule has not the feeling of a horse, So he verily believes a Negro has not the Perfection of feeling equall to White People. Himself has seen them have their limbs cut off, and never Shrink.'⁶⁹ 'You would be surprised what sulky wretches they are, Require a whip for every Trifle ...'⁷⁰

A good deal of the advice in favour of humanity and foresight was composed by plantation owners who had securely established themselves in England, and at times even they found

⁶⁶ Debien, *Les Esclaves*, 346-9; B. W. Higman, 'Slavery and the Development of Demographic Theory in the Age of the Industrial Revolution', in J. Walvin (ed.), *Slavery and British Society 1776-1846* (1982), 169, 172.

⁶⁷ Monson MSS, Thistlewood Diaries, 26 July 1759, fos. 135, 147.

⁶⁸ Tudway MSS, Box 15, Letter Book from Antigua 1759-84, M. S. Walrond to C. Tudway, 4 Oct. 1765, F. Farley to C. Tudway, 10 Oct. 1766.

⁶⁹ Monson MSS, Thistlewood Diaries, 11 July 1752.

⁷⁰ British Library, Add. MS 30001, Ricketts and Jarvis family correspondence, Mrs W. H. Ricketts from Jamaica, 23 June 1758.

these principles difficult to follow. During an unusually severe drought that affected Antigua in 1717-18 Mrs Rachel Tudway, writing from London, had many kind words for 'the poor negroes', and would have liked to send out more food, 'but returns being so small and sugars so low hinders me from following my inclination'.⁷¹ On Barbados planters had to contend over the longer term with the physical deterioration of their estates; yields were so reduced that they simply could not afford to give sufficient rations while at the same time supporting themselves and their families in a respectable style. On Jamaica and the Leewards supplementary feeding was required as sugar displaced the provision grounds, and it is not surprising that recognition and response tended to lag behind a growing need, especially when overseers were able to make a profitable sideline out of retailing luxuries such as rice and wheat flour to the more affluent slaves.⁷² Hunger could easily be seen as the result of individual carelessness, rather than of a more general failure in economic arrangements. Contemporary calculations on slave maintenance did not design a starvation diet and, as we shall see, they did not change very much with amelioration. Nevertheless, by the early nineteenth century most planters would fulfil their own estimates of what was required to keep up an efficient work-force. During the first three-quarters of the eighteenth century, for one reason or another, they often did not.

⁷¹ Tudway MSS, Box 15, Letter Book 1717-29, R. Tudway to T. Fenton, 14 Oct. 1717, 28 Feb. 1718; Dirks, 'Resource Fluctuations', 146. Although Richard Beckford was in Jamaica when he drafted his instructions, he had been educated in England and was due to return there: L. B. Namier and J. Brooke, *The History of Parliament: The House of Commons 1754-1790* (3 vols., 1964), ii. 74.

⁷² Monson MSS, Thistlewood Diaries, 17 Nov. 1761, 25 Mar. 1764, 29 May 1765.

The Planters in Adversity, 1763-1834

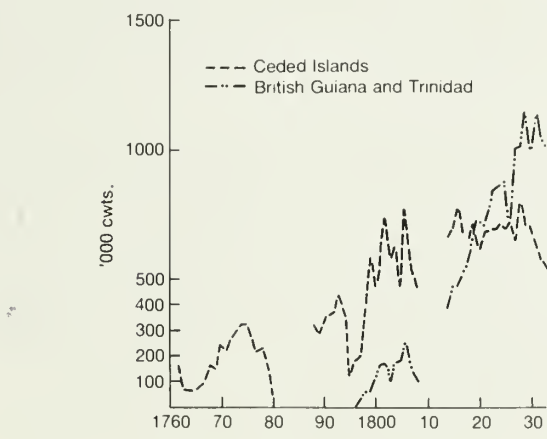
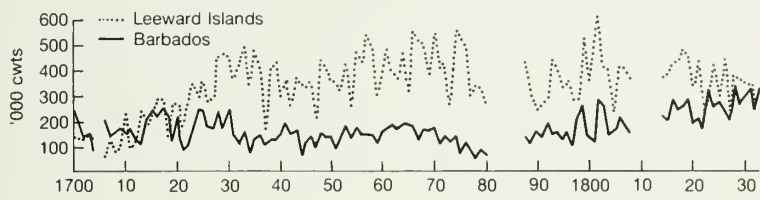
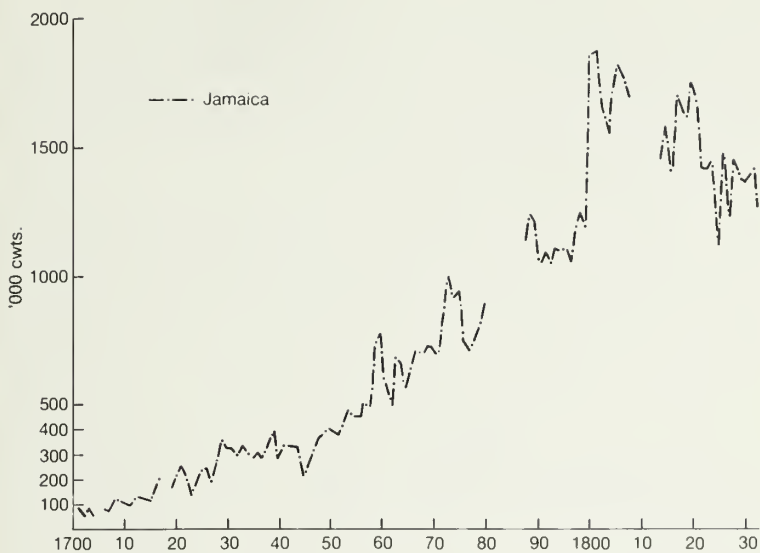
HOWEVER careless and ill considered their management may have been, in the 1750s most planters were assured of a comfortable livelihood. While the prices that they received for their sugar had increased over the previous twenty years, their operating costs were little changed, as the capacity of the North American colonies to deliver food and lumber grew steadily, and Africa offered an apparently unlimited source of slaves. But during the following decade there began what was to prove a series of threats to the West Indians' prosperity.¹ In 1763, as one of the fruits of victory over France in the Seven Years War, Great Britain took possession of the so-called Ceded Islands—Dominica, Grenada, St Vincent, and Tobago—her first important colonial acquisitions in the Caribbean for more than a century. Dominica and Grenada had already been lightly settled by the French, mainly for the growing of coffee, while St Vincent and Tobago were almost completely undeveloped, but all seemed well suited to the production of sugar, with more reliable rainfall and fertile soil than most of the longer-established territories. Soon British colonists were arriving to lay out plantations, and within ten years the Ceded Islands had between them about 70,000 slaves, nearly equal to the numbers on Barbados, while their sugar exports were sufficient to meet a fifth of the metropolitan demand (Fig. 2).² The new competition brought the rise

¹ For the most detailed account of this period see Ragatz, *Fall of the Planter Class*.

² Sheridan, *Sugar and Slavery*, 452-9, 489-97.

FIG. 2. Sources of British Sugar Imports from the West Indies, 1700-1833

Sources: Imports to England and Wales 1700-80: Sheridan, *Sugar and Slavery*, 487-9; Ragatz, *Statistics*, 19. Imports to Great Britain 1788-1808, 1814-33: Ragatz, *Statistics*, 20; PRO, Cust. 17, States of Navigation, Commerce, and Revenue.



of West Indian export prices to a halt and at the same time pushed up many of the planters' expenses. For example, there were increases of about 30 per cent in the cost of imported timber, and in the salaries paid to the white men employed as estate managers and field supervisors.³

Yet these developments were for the time being rarely more than a cause of mild unease to the less productive planters of Barbados and the Leewards, many of whom participated in the new colonizing movement. Much more ominous was the growing North American discontent with British rule, reaching the point of open rebellion in 1775. Earlier international conflicts had done little harm to the British West Indies, at least since 1706 when, on St Kitts, they last suffered invasion by the French. After this episode Caribbean strategy came to depend mainly upon naval blockade and privateering, activities in which Great Britain usually had the upper hand. So her colonists' most serious complaints were of higher charges for freight and insurance, or the delays that arose from the need to sail in convoy; prolonged interruptions to shipping only happened occasionally. On the other hand the French sugar trade was often severely obstructed, producing scarcities in continental markets from which the British could take advantage, while the Admiralty greatly increased its purchases of rum for naval rations. Sometimes, as in the later 1750s, planters may have found a period of warfare more profitable than peace.⁴

However, the American War of Independence had many novel and unpleasant features. Between 1775 and 1782 the North Americans, with their formidable privateering capacity, were enemies instead of allies, reinforced from 1778 by the French. Rates for marine insurance in the eastern Caribbean reached levels that had not been seen since the seventeenth century, and contact was officially prohibited with the rebellious colonies, hitherto such important trading partners. Soon the planters were complaining loudly that wholesale starvation was imminent,⁵ although in seeking attention and aid from the home

³ Pares, *Yankees and Creoles*, 114-16. The usual designations for a salaried employee in charge of an estate were 'overseer' in Jamaica and 'manager' in the eastern Caribbean. The subordinate white men were called 'bookkeepers' in Jamaica, 'overseers' in the Leewards, and 'drivers' in Barbados.

⁴ R. Pares, *War and Trade in the West Indies* (Oxford, 1936), esp. 471-96.

⁵ Ragatz, *Fall of the Planter Class*, 142-72; R. B. Sheridan, 'The Crisis of Slave Subsist-

government they rather exaggerated their plight.* Jamaica had considerable internal resources; even on the smaller islands there was scope for growing more food to substitute for North American supplies, and extra consignments of beans and herrings were available from Great Britain. Large quantities of Indian corn continued to arrive from the Chesapeake, via neutral traders, at least until Rodney's fleet captured the Dutch entrepôt of St Eustatius early in 1781.⁶ Only on Antigua is there evidence of persistent shortages and heavy mortality, and here the damage was done not just by the war but also by drought, said to have been the worst suffered on the island for thirty years. Food crops could not be increased until after 1780, while many owners lost two consecutive sugar harvests, and with them the means to make emergency purchases.⁷

In contrast, St Kitts and Nevis were spared such calamities, and almost fully recovered the extra cost of imported goods through the higher prices paid for sugar in Europe. Even the capture of these two islands by the French during the last phase of the war caused no serious loss, for the occupying forces behaved correctly, there was little damage to property, and normal trade was allowed to continue.⁸ However, relative prosperity here was to some extent the result of misfortune and curtailed production elsewhere. Barbados was obliged to reduce its modest export volumes even further to accommodate increased food growing, and in 1780 both this colony and the western parishes of Jamaica were struck by especially severe hurricanes. The storms caused only moderate loss of life, but many mills and boiling houses were destroyed, shortages of building materials prolonged the reconstruction, and labour had

* See endnote 2.

ence in the British West Indies during and after the American Revolution', *William and Mary Quarterly*, 3rd Ser. xxxiii (1976), 615-20.

⁶ Fitzherbert MSS, W1/17, Turners Hall plantation accounts 1775-80; Stapleton-Cotton MSS, Bundle 15, Nevis estate, accounts and correspondence 1777-82; Tudway MSS, Boxes 9, 13, Parham plantation invoices and accounts 1779-82.

⁷ Vassall MSS, W. Vassall to J. Wedderburn, 2 Aug. 1777; Sheridan, 'Crisis of Slave Subsistence', 623-4; Tudway MSS, Box 15, Letter Book from Antigua 1759-84, F. Farley to C. Tudway, 10 June 1778; M. S. Walrond to C. Tudway, 29 Sept. 1779; S. Eliot to C. Tudway, 19 May 1780.

⁸ Pares, *West-India Fortune*, 88-101; Stapleton-Cotton MSS, Bundles 2-5, 8, merchants' accounts of the St Kitts and Nevis estates 1747-1810.

to be diverted from the fields, to the further detriment of the sugar crop.⁹

So there is no doubt that the war brought considerable losses to much of the plantation economy, and for a time it seemed that they would extend into the peace. Apart from the further hurricanes that reached Jamaica in rapid succession up to 1786, there were more general difficulties in re-establishing the North American trade. Up to 1775 it had been conducted mainly in the shipping of the northern colonists; once their independence was recognized, their vessels had to be considered as foreign-owned, and as such liable to exclusion from the British islands under the principles of the Navigation Acts. The sugar planters were naturally anxious that an exception should be made in this case, but parliament, shaken by defeat and its implications for the nation's naval power, was determined to maintain the old rules and encourage the remaining North American colonies. So the fish, beef, and pork of the United States were completely prohibited from the British West Indies, while the United States' corn and timber could only be admitted in British or British colonial ships.

In practice the new dispensation was rather less restrictive than had been expected. At first a good deal of evasion took place: United States captains secured false papers, or put into island ports under pretext of needing repairs, while governors and customs officials, susceptible to local opinion, rarely troubled themselves to intervene. From 1785 administration became more rigorous, but British merchants were developing a substantial carrying capacity from North America to the Caribbean, as one leg of a triangular pattern of trade based upon their own ports.¹⁰ Through improvisations of this kind, North American supplies were reaching the plantations by the end of the 1780s in roughly the same quantities as before the war, at prices which had risen by no more than that of sugar over the intervening period. Although the market for rum remained depressed, because of the limitations on back-carriage to the United States and the growth there of whisky consumption, the use of sugar in Great Britain grew rapidly, especially after the

⁹ Senhouse MSS, *Memoirs of Joseph Senhouse*, vol. iii, fos. 327-36; Vassall MSS, W. Vassall to J. Wedderburn, 5 Mar. 1781, 24 Dec. 1782, 18 June 1784; below, endnote 2.

¹⁰ Sheridan, 'Crisis of Slave Subsistence', 628-38; Drescher, *Econocide*, 43-5.

reduction of the duty on tea in 1786.¹¹ Then in 1791 the recovery of the estates' fortunes was confirmed by the slave rebellion that virtually eliminated exports from the French colony of Saint-Domingue, hitherto the most successful centre of production in the Caribbean. By 1793 Britain was again at war with France, securing further commercial advantages, and the British islands were officially reopened to United States shipping.

For most planters the 1790s were a time of prosperity and increased output, but a new phase of distress began at the turn of the century. Napoleon's victories obstructed the re-export of sugar to continental Europe, imposing a greatly enlarged volume of consignments on the British home market. Parliament's decision in 1807 to prohibit slave-trading from Africa by British subjects, while not immediately detrimental to West Indian revenues, had disturbing implications for the long term. New hostilities with the United States again raised the cost of many essential supplies, although as compensation the decline of French power allowed large quantities of British colonial sugar to reach the Continent once more from 1813, for the time being without much competition. In March 1815 the price for a hundredweight of West Indian muscovado averaged more than 90 shillings, net of duty, the highest level ever recorded.¹²

Yet, once stocks had been replenished, the effects were felt of the extensive new plantings induced by the recent episodes of scarcity. Cuba appeared for the first time as a major force in the international sugar trade; even the Brazilian industry enjoyed something of a revival. Also, as in 1763, Great Britain took advantage of military success to confirm new tropical acquisitions: Mauritius in the Indian Ocean and, in the Caribbean, Trinidad, St Lucia, Demerara, Essequibo, and Berbice (the last three subsequently united as British Guiana). Tobago, lost during the American War of Independence, was recovered. Many of these territories had considerable natural advantages as sugar producers and developed rapidly once they were assured of access to British finance. Furthermore, the abolition in 1813 of the East India Company's trading monopoly seemed to open

¹¹ See e.g. Codrington (Barbados) MSS, X/43, plantation accounts 1784-8; Tudway MSS, Box 9, Parham plantation accounts 1783-9.

¹² L. J. Ragatz, *Statistics for the Study of British Caribbean Economic History, 1763-1833* (1927), 8, 21.

up a new source of supply from Asia. By 1820 markets were glutted, the price of sugar declined sharply to its lowest level since the middle of the eighteenth century, and the maintenance of import duties at their high wartime rates inhibited any compensating growth in consumption.¹³

Equivalent reductions to working expenses could not be made on the longer established plantations. After the conclusion of peace in 1815 the United States, now more self-confident and assertively nationalist, would not meekly retire to its trading function of the 1780s, as the tolerated remedy for deficiencies in Britain's own colonial system. Unless American shipping was admitted freely to the British West Indies, they should not be allowed any direct commerce with United States ports. No compromise could be found between this demand and the exclusive principles of the Navigation Acts until 1830, and in the mean time planters had to rely upon British North America or Europe for their timber and other provisions, or on the Dutch and Danish islands as points of contact with the United States. All these expedients were most unsatisfactory. For example, the white oak staves used for making sugar hogsheads, which had sold for as little as £3 per thousand in the 1750s, cost £15 or £20 per thousand in the 1820s.¹⁴

Over the same period the estates also found it more difficult to acquire labour. Rates of pay for white employees doubled, because of the extra demand for their services from the new colonies, the long-term growth of incomes within Great Britain, and the increased scale of international warfare. The press-gangs deterred or intercepted many likely recruits, and further damage was done by the yellow-fever epidemics associated with the ambitious Caribbean military campaigns of the 1790s. The sudden introduction of large, unacclimatized contingents to the region at this time significantly increased the disease's virulence, or at least its fearsome reputation.¹⁵

¹³ Ragatz, *Fall of the Planter Class*, 204-383.

¹⁴ Ibid. 338-45, 354-61; Pares, *Yankees and Creoles*, 114; PRO C. 104/179-80 (Chancery Masters' Exhibits), Les Coteaux plantation accounts 1817-29.

¹⁵ D. Geggus, 'Yellow Fever in the 1790s: The British Army in Occupied Saint Domingue', *Medical History*, xxiii (1979), 38-58. For warfare and disease as obstacles to recruitment by the estates see: Vassall MSS, W. Vassall to J. Wedderburn, 5 July, 4 Oct. 1780; Penrhyn MSS, J. Davis to Lord Penrhyn, 1 Nov. 1798; Nisbet MSS, 5477, Letter Book 1797-1802, W. Chisholme to J. Craggs, 6 Nov. 1799; Fitzherbert MSS, W1/9, W. Sutherland to W. P. Perrin, 15 Dec. 1801.

Slave prices moved in response to a wider range of influences, but with much the same final result.¹⁶ During the 1760s and early 1770s they were pushed up by the demand from new settlements in the Ceded Islands. Then came ten or fifteen years of relative stability as planters, their confidence sapped by the American war and natural disasters, were cautious in their purchases.¹⁷ The boom following the rebellion in Saint-Domingue induced another upward movement, but for a time it lagged behind the inflation of sugar prices, and not until the later 1790s did the workings of the market for slaves become once again a subject of serious complaint. In 1798-9 the average price of a newly arrived African increased from rather less than £60 to about £70, just as the exclusion of colonial produce from continental Europe began. One reason for this painful conjuncture was heavy purchasing by the new Jamaican coffee estates; also more stringent parliamentary regulation raised operating costs in the British slave-trade during its final years.¹⁸ From 1808 no further deliveries from Africa were possible, and in every sugar colony except Barbados the continuing excess of deaths over births meant a decline of estate population. So by previous standards slaves remained very expensive, despite the plantations' accumulating difficulties. Thus in Jamaica during and immediately after the Napoleonic wars a healthy young field worker was valued at about £100, compared with £40 in the middle of the eighteenth century. Later uncertainties brought the price down to £65 by 1830, but hiring rates, a more immediate concern for established planters, did not fall in proportion.¹⁹

To sum up: by the 1820s sugar prices had returned to their levels of the 1750s, rum prices were 15 per cent lower, while the average cost of the main items of estate expenditure had doubled (Table 2).

How successfully did the West Indians cope with misfortune? To judge from their public complaints most were well on the way to bankruptcy from at least the 1770s: crippled by the interruption of imports during the American War of Independence,

¹⁶ Information about slave prices and rates of pay for white men has been taken from estate records.

¹⁷ Vassall MSS, W. Vassall to J. Wedderburn, 13 Jan. 1781, 18 June 1784, 5 Dec. 1787.

¹⁸ Fitzherbert MSS, W1/9, F. Graham to W. P. Perrin, 27 Feb. 1805; H. Klein, 'English Slave Trade', 28-9.

¹⁹ Ward, 'Profitability', 205.

TABLE 2. *Annual Operating Expenses of a Sugar Estate, c.1750-1830*

	Average distribution of expenses c.1750 (£s per slave)	Change in unit cost of item c.1750-1830 (%)
Slaves (depreciation and hire)	1.50	+100
Payments to white employees	1.50	+100
Purchased food	0.45	+50
Lumber	0.75	+200
Clothing	0.20	-20
Medicine	0.10	+100
Taxes	0.20	+150
Miscellaneous	1.30	+50
All expenses	6.00	+96

Source: Plantation accounts.

ruined by Napoleon's closure of re-export markets, subsequently quite incapable of surviving in the face of competition from Cuba or Brazil, where the soil was so much richer and the African slave-trade continued.²⁰ Furthermore, while for most of the eighteenth century the planters had been blamed for inordinate wealth, by the nineteenth century the gravity of 'their almost universal state of pecuniary embarrassment'²¹ was the one point upon which they could agree with their many critics. These allegations were apparently confirmed by the stagnation or decline in sugar consignments from most of the islands during the last decades of slavery (Fig. 2).

Yet it remains doubtful whether the British West Indies had reached the point of wholesale economic failure. Some of those who campaigned against slavery on humanitarian grounds emphasized the institution's material weakness to reinforce their case. Free traders pressing for an end to the colonies' fiscal privileges could see the convenience of arguing that it was both

²⁰ R. B. Sheridan, "'Sweet Malefactor': The Social Costs of Slavery and Sugar in Jamaica and Cuba, 1807-54', *Economic History Review*, 2nd Ser. xxix (1976), 239-43.

²¹ *Report of the Committee of the Society for the Mitigation and Gradual Abolition of Slavery* (1824), 28.

futile and unjust 'to bribe a parcel of slave-holders to continue in a losing business'.²² After emancipation liberal opinion had to explain the further fall in economic activity—or at least in production for export—without reflecting on the moral worth of the freed slaves.²³ As for the planters, they were eloquent only in troubled times, when there was a need for government assistance. Phases of prosperity were borne in silence. It was never thought appropriate to dwell upon the many illicit means used to evade restrictions on the North American trade, or the growth of Scottish herring exports which helped to keep down the cost of salt fish in the West Indies when contact with New England was difficult, or the progress in manufacturing which reduced the price of cloth bought for the slaves.²⁴ The resulting propaganda need not be reliable, but this was only admitted in confidence. A colonist wrote from Barbados to an English friend during the American War of Independence: 'I would have you know that we are not upon the point of starving as your Varlets of news writers so positively assert'.²⁵ In 1832 a proprietor was advised to keep material about his Antigua estate away from a parliamentary committee investigating West Indian conditions, 'because it does not exhibit the presence of distress so severely as the majority of instances, and the object is to make out all bad and no good'.²⁶

On the evidence of the planters' private accounts it seems that adversity was more or less balanced out by favourable influences, at least until the end of the Napoleonic wars. In the original British West Indian colonies rates of profit on sugar-estate capital ran at about 10 per cent up to the 1770s, when they were severely affected by the American War of Independence. Subsequently there was a more or less complete recovery. Acute and sustained depression came only in the 1820s, yet even then profitability was reduced by about half, rather than ended completely (Table 3).

²² Ragatz, *Fall of the Planter Class*, 365.

²³ According to W. G. Sewell, *The Ordeal of Free Labor in the British West Indies* (2nd edn., 1862), 238: 'He [the planter] was bankrupt before emancipation; but it was emancipation that tore down the veil which concealed his poverty.'

²⁴ Information on these points comes from plantation accounts.

²⁵ Senhouse MSS, correspondence 1772-7, fo. 67, J. Senhouse to L. D. Ballantine, 2 June 1777.

²⁶ Codrington (Antigua) MSS, C38, J. Liggins to C. B. Codrington, 28 Jan. 1832.

TABLE 3. *Estimated Annual Rates of Profit in British West Indian Sugar Planting, 1749-1834 (%)*

	Barbados	Leeward Islands	Jamaica	Ceded Islands	Trinidad, British Guiana	All British West Indies
1749-55	3.4	10.6	13.0	—	—	10.1
1756-62	11.2	12.9	14.8	—	—	13.5
1763-75	5.6	12.3	8.9	10.5	—	9.3
1776-82	2.3	2.4	3.0	7.0	—	3.4
1783-91	5.3	12.1	6.4	15.5	—	8.5
1792-8	6.1	12.0	13.9	13.8	—	12.6
1799-1819	5.8	9.1	9.6	10.0	16.0	9.6
1820-34	7.7	3.9	5.3	5.7	13.3	7.1

Source: Ward, 'Profitability', 207.

However, while it is clear that the assertions of general ruin were exaggerated, they cannot be discounted entirely. Detailed information survives for only a small minority of plantations, and possibly these were better situated and more successful than the average. For example, Worthy Park in Jamaica gave large returns up to the time of emancipation, but contemporaries recognized it as one of the best properties on the island. So the estate's historians suggest that 'the fortune of Worthy Park between 1815 and 1834 was that of a piece of flotsam rather more buoyant than average on a wave of general depression'.²⁷ In Jamaica as a whole during this period there was a particularly sharp decline in the production of sugar (Fig. 2), and more than two hundred plantations in the colony abandoned its manufacture, but full records have been found for only one of these.²⁸

On the other hand, because the papers from absentees' estates have had the best chances of survival, especially when accumulating in the country houses of British landowners, relatively little is known about those plantations that belonged

²⁷ Craton and Walvin, *Jamaican Plantation*, 187-8, 246-7; M. Craton, *Searching for the Invisible Man: Slaves and Plantation Life in Jamaica* (Cambridge, Mass., 1978), 21-4, 172-7.

²⁸ Craton, *Invisible Man*, 39; Fitzherbert MSS, W1/14, include papers from Grange Hill plantation in the eastern parish of Portland. The estate ceased to make sugar after 1827.

to residents (still a significant minority), or to metropolitan merchants, both classes of owners which may have been rather more skilful and assiduous in management.²⁹ Furthermore, estates that ceased to make sugar need not become completely worthless, for often they were converted to stock farms. These 'pens', as they were called in Jamaica, might be useful sources of revenue and a support to the remaining sugar plantations.³⁰ So there seems unlikely to be any systematic bias in the evidence available from the better-documented properties; by the most easily calculated criteria—their size, the quality of their sugar, and the productivity of the slaves—they appear to be quite representative.³¹

However, even if it can be accepted that sugar planting in the older colonies remained profitable, perhaps at the average annual rate of about 5 per cent for absentee owners by the 1820s, was this enough to assure the prospects of the estate economy over the long term? Could such returns, so modest by eighteenth-century standards, persuade owners to maintain capital in the West Indies, making those improvements that were necessary for survival as conditions became more competitive? According to the planters a yield of 5 per cent, even if achieved, would have been quite inadequate. They liked to argue that unusual profits were needed to compensate for the special risks which they faced—war, drought, hurricane, or slave insurrection—sources of instability which may have been aggravated as time passed. For example, up to 1775 West Indians could obtain North American corn or barrel staves openly and as of right, within an officially sanctioned commercial system. Afterwards this trade often depended upon daring and ingenuity in contraband, the lucky arrival of prize goods taken by privateers, or the presence of a governor and customs officials sufficiently sympathetic or venal to admit the Americans at local ports when the need arose. Estate accounts may show that in practice

²⁹ If resident planters kept detailed records, very few have survived in West Indian conditions. The Pinneys and Gladstones are the only merchant-planters to have been studied in any detail: Pares, *West-India Fortune*; S. G. Checkland, *The Gladstones: A Family Biography 1764-1851* (Cambridge, 1971).

³⁰ For profits from Jamaican pens, see Dickenson MSS, DD/DN 478-80, accounts of Appleton plantation with Barton Isles, Pepper, and Bona Vista pens 1821, 1827; Gale-Morant MSS, Box 3, accounts of Mount Hindmost plantation with St Jago and Paisley pens 1828-9, 1833-4. For pens as a complement to sugar production, see below, 87-95.

³¹ Ward, 'Profitability', 206-8.

business with North America continued much as before, but it had acquired a very uncertain character, and at the same time the European market for sugar became increasingly volatile. Even though estate profits were usually maintained up to about 1820, on an average and over the medium term, they were likely to fluctuate much more sharply from year to year than in the earlier eighteenth century. This was the experience of the Parham plantations on Antigua (Fig. 3).

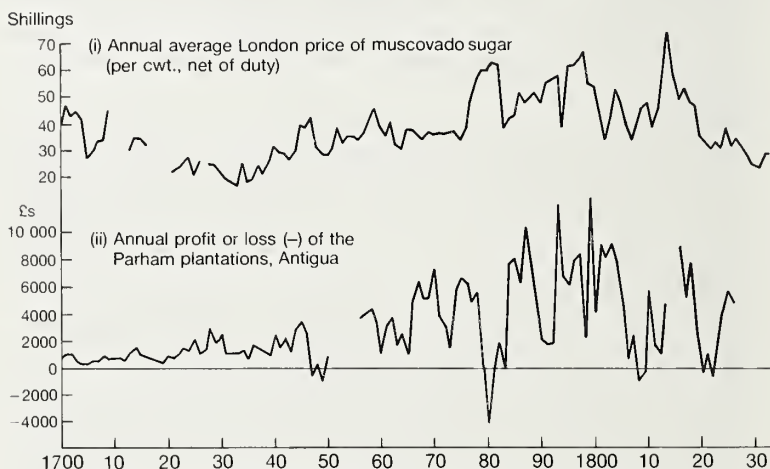


FIG. 3. Sugar Prices and Plantation Profits, 1700-1833

Sources: (i): Sheridan, *Sugar and Slavery*, 496-7; Ragatz, *Statistics*, 8; Deerr, *History of Sugar*, ii. 531; *Parl. Papers* 1789, xxvi (646a), pt. 5, Antigua; (ii): Tudway MSS, Parham plantations, accounts and invoices.

The planters sometimes alleged as a measure of their insecurity that West Indian estates were bought and sold at from ten to twelve times their annual net revenue or, in the contemporary expression, at from ten to twelve years' purchase.³² By way of contrast the greater safety and prestige of English landed property commanded twenty-five or thirty years' purchase. This

³² Bryan Edwards, *The History, Civil and Commercial, of the British Colonies in the West Indies* (5th edn., 5 vols., 1819), ii. 473; Ragatz, *Fall of the Planter Class*, 307; W. A. Green, *British Slave Emancipation: The Sugar Colonies and the Great Experiment 1830-1865* (Oxford, 1976), 223 n. 118; A. Young, *An Enquiry into the Progressive Value of Money in England* (1812), 99.

implied that while a yearly return of 3 or 4 per cent might be acceptable in English agriculture, in the West Indies 8 or 10 per cent was needed, so that average profits at about 5 per cent in the 1820s would put most estates well below the margin of viability. But once again public assertions are open to question. Private records show that by the later eighteenth century West Indian estate valuations of at least fourteen or fifteen years' purchase had become usual, with as much as twenty-five years' purchase in Barbados.³³ Perhaps planters' incomes were becoming more irregular, but the long-term decline of interest rates worked as a countervailing influence.³⁴ Through the later 1820s there was still an active market in plantations and slaves, at prices close to their economic or replacement cost, suggesting that investors found current rates of profit at least tolerable.³⁵ No doubt this was due partly to the fact that returns from alternative assets were almost equally depressed, especially once government borrowing ceased at the end of the Napoleonic wars. Within ten years the yield on Consols fell from 5 to about $3\frac{1}{2}$ per cent.³⁶

Estate accounts and correspondence continue to mention investment outlays. In 1825 the attentive Sir Henry Fitzherbert, an absentee proprietor on a tour of inspection in Jamaica, wrote home to his wife: 'our Butterley wheel and mill, which you may remember sceing with Mr. Jessop, works beautifully . . .'. Shortly afterwards he drove to inspect a 'newly invented rum still' and by 1828 had bought one himself. In 1830 his agents completed a new boiling house, with twice the usual number of coppers,

³³ Monson MSS, Thistlewood Diaries, 21 Dec. 1766; Stirling of Keir MSS, T-SK 21/3, valuation of Hampden, Jamaica 1770; Codrington (Antigua) MSS, C6, W. Codrington to Mr Redhead, 1754; C27/1, C. B. Codrington to Mr James, 9 Feb. 1809; Newton MSS, 523/287, valuations of Newton and Seawells, Barbados 1803; Third Report of the Select Committee on Sugar and Coffee Planting, *Parl. Papers* 1847-8, xxiii, pt. I (167), QQ. 5182-7.

³⁴ The usual rate on West Indian mortgages fell from 8% in the mid-18th century to 5% by the 1830s: Pares, *West-India Fortune*, 250, 259; *Parl. Papers* 1847-8, xxiii, pt. II (206), Q. 11509.

³⁵ PRO, Records of the Slave Compensation Commission, T. 71/1537, 1542, 1549, accounts of sales of slaves and estates in Jamaica, Barbados, Antigua, St Vincent, and St Kitts 1823-34; S. L. Engerman, 'Economic Change and Contract Labor in the British Caribbean: The End of Slavery and the Adjustment to Emancipation', *Explorations in Economic History*, xxi (1984), 138-41.

³⁶ Checkland, *The Gladstones*, 198; B. R. Mitchell, *Abstract of British Historical Statistics* (Cambridge, 1962), 455.

intended to permit the abolition of night work.³⁷ About the same time substantial sums were spent on repairing the boiling house at Mesopotamia, another Jamaican estate.³⁸ Instances such as these are confirmed by the aggregate statistics of trade, which show that deliveries of timber, iron, and other material required for maintenance work were only slightly reduced in the 1820s, although expenditure on the more elaborate and novel types of machinery or millwork (mainly steam engines) was discouraged by the depressed price of sugar from 1820 (Table 4).³⁹

So how was it possible for the sugar estates to show this measure of endurance? Their first line of defence was the inflated returns which they had offered in the past. Planters might protest that unusual risks required unusual compensation, but evidently eighteenth-century profits had included a substantial monopoly rent, the reward of a privileged position in the international sugar market, and reflected by the valuations put upon British West Indian cane land.⁴⁰ These surpluses could be eroded by the growth of competition to leave enterprises that were still worth keeping up, however painful the change to those directly involved, entailing as it did a drastic contraction of revenues and asset values. While rates of return on capital valued at current costs were roughly halved, because of the general post-war deflation proprietors' nominal incomes fell by two-thirds or three-quarters. For example, Sir Christopher

³⁷ Fitzherbert MSS, WI/14, Sir H. to Lady Fitzherbert, 5-6 Apr. 1825; WI/20, P. Mahon to Sir H. Fitzherbert, 14 Mar. 1828, 14 Oct. 1830.

³⁸ Clarendon MSS, Dep. b 35, Mesopotamia plantation accounts 1830. For other references to expenditure on capital equipment in the 1820s see Craton and Walvin, *Jamaican Plantation*, 182 n. 54, 187; Codrington (Antigua) MSS, C37, Jarritt to C. B. Codrington, 12 Feb. 1830; Stapleton-Cotton MSS, Nevis plantation accounts 1828; Messrs Manning and Anderdon to Lord Combermere, 3 Feb. 1829.

³⁹ Changes occurred over the period in the allocation of items to categories in the official returns, e.g. between 'iron' (valued at £1.25 per cwt. in 1829) and 'hardware' (£4.65 per cwt.). Also the unit cost of iron and iron goods fell by about a third between 1814 and the later 1820s. Taking account of these points, average shipments of all metal and metal goods, valued at constant prices, fell between 1800-8 and 1820-9 by 5% for the Leeward Islands, 10% for Barbados, and 30% for Jamaica. The particularly marked decline in the case of Jamaica was due mainly to the curtailment of copper imports, as the rapid growth of the island's sugar output and the need for extra processing capacity came to an end (Fig. 2).

⁴⁰ In the 18th century cane land was commonly valued at up to three or four times the cost of its clearing and cultivation: see e.g. Slebech MSS, 11523, valuation of Pleasant Hill and Phillipsfield plantations, Jamaica 1789; Smyth MSS, AC/WO 16(27) 166(d), valuation of Spring plantation, Jamaica 1795.

TABLE 4. *Shipments of Capital Equipment and Maintenance Materials to the British West Indies, 1800-1834*
(Annual Averages)

	Copper (cwts.)	Hardware (cwts.)	Iron (cwts.)	Machinery (£s)	Mills and millwork (£s)	Shingles ('000s)	Lumber ('000 ft.)
<i>Barbados</i>							
1800-8	869	316	8,642	—	—	n.d.	n.d.
1812, 1814-19	1,045	1,450	5,797	556	870	n.d.	n.d.
1820-9	665	1,170	4,513	282	435	n.d.	n.d.
1830-4	755	1,833	5,213	176	140	n.d.	n.d.
<i>Leeward Islands</i>							
1800-8	1,238	443	9,964	—	—	n.d.	n.d.
1812, 1814-19	818	712	10,364	2,110	1,437	n.d.	n.d.
1820-9	907	579	8,567	848	1,160	n.d.	n.d.
1830-4	393	764	7,104	316	402	n.d.	n.d.
<i>Jamaica</i>							
1800-8	12,425	1,292	70,189	—	—	n.d.	n.d.
1812, 1814-19	4,054	6,997	55,003	13,381	6,717	7,264	6,361
1820-9	3,003	7,150	47,146	2,058	3,528	8,874	6,737
1830-4	1,786	7,615	38,246	848	1,092	6,662	6,823

Sources: Copper, hardware, iron, machinery, mills, and millwork (exports from Great Britain): PRO, Cust. 17/29-38, State of Navigation, Commerce, and Revenue 1800-8; Cust. 8/1-22, Ledgers of Exports of British Merchandise, 1812, 1814-34. Shingles, lumber (Jamaican imports for years ending Sept. 1815, 1816, 1818, 1820, 1823, 1826, and 1829, and for years Jan.-Dec. 1832-4: Edwards, *West Indies*, v, Appendix, 47, 53; PRO, CO 141, *Royal Gazette* (Spanish Town, Jamaica), Nov. issues; Revenue, Population and Commerce of the United Kingdom, *Parl. Papers* 1835, xlvii (693) etc.

Codrington's annual receipts from Antigua averaged £14,800 between 1815 and 1819, but only £4,400 during the following decade.⁴¹ West Indian distress was magnified by the fact that many planters had incurred heavy debts, to finance the development of their estates, to provide for dependent relations, or simply to maintain personal consumption from a fluctuating income. Obligations which seemed reasonable when undertaken at a high-water mark of prosperity could become impossibly burdensome after 1820, with interest charges, annuities, and legacies swallowing up any remaining profits.⁴²

Nevertheless, while an estate remained economic in the more fundamental sense that the current value of its output exceeded its normal operating costs, or apparently could be made to do so, then it might still be an attractive proposition, if means were found to transfer or write off old liabilities. New money was available, most commonly from merchants in the sugar trade. In 1828 John Gladstone of Liverpool received a report on the state of business in Demerara: 'Hall McGarrell & Co of London are taking up estates on Mortgage at four per cent; and snatch at everything that comes into the market; and Mr Laing for Sandbach's House, has made several new connections lately, upon (I hear only) very beneficial terms for them.'⁴³

Demerara was a new and exceptionally productive colony, but Gladstone, after making his first West Indian acquisitions here, developed an interest in Jamaica during the later 1820s. The Shands, also of Liverpool, were active in Antigua, while Bristol and London firms invested in Nevis at the same time.⁴⁴ Sometimes they purchased a property outright, or they might prefer to leave the existing owner in place, clinging to a precarious equity of redemption, bound to make consignments to his financier, and sucked dry by commission and credit charges.⁴⁵

⁴¹ Codrington (Antigua) MSS, A49, A62, Antiguan accounts 1815-30.

⁴² For the case of the Duer estate on Antigua see D. Hall, *Five of the Leewards, 1834-1870* (St Lawrence, Barbados, 1971), 13, 103-4.

⁴³ Gladstone MSS, G 56, R. Gladstone to J. Gladstone, 20 Dec. 1828.

⁴⁴ Checkland, *The Gladstones*, 196-8, 287, 320, 414; R. G. Wilson, *Greene King: A Business and Family History* (1983), 43-4; Pares, *West-India Fortune*, 310-12. Pares, studying the Pinneys of Bristol, a firm that was withdrawing from the West Indies during the 1820s, took a gloomy view of the prospects for the older British islands at this time. But he noticed the Pinneys' 'surprising success' in finding buyers for their plantations, most of which were on Nevis.

⁴⁵ PRO, Colonial Office Confidential Print, CO 864/1, H. Taylor, 'Memorial for the

Either way the business was not for the squeamish or the faint-hearted. There might be costly litigation as planters struggled bitterly against displacement and personal ruin. Some estates became so thoroughly entangled in complexities of title as to be beyond rescue. A good deal of self-assurance was needed to carry through tortuous financial reconstructions in the face of such a severe trade depression, coinciding with the revival of the anti-slavery movement, and the decision in 1823 by parliament and the home government to prepare for emancipation.⁴⁶

Yet once a little time had passed in which to get over these shocks, it was possible to see grounds for a cautious return of confidence. The price of sugar seemed to have found a floor by 1821; during 1825 there was even a short-lived recovery. In principle West Indian planters still enjoyed considerable tariff protection within the United Kingdom, but in fact, because their output now exceeded home demand by a wide margin, and because a good deal of sugar had to be re-exported to other markets, usually British colonial produce sold for much the same prices as its foreign equivalent. Thus it could be imagined that international competition had done its worst. Some older merchants may have remembered how in the 1780s, after the American War of Independence, markets were depressed because the public's taste for sugar had been partly lost as a result of wartime scarcity, yet a period of low prices had been sufficient to revive old habits of consumption.⁴⁷ Also experience and closer scrutiny suggested that some of the new rivals might be rather less formidable than had at first appeared. Within a few years India proved a disappointment for those who had hoped to develop it as a source of sugar. The growth of Brazilian

Cabinet on the Situation in the West Indies, January 1833', 58-61, rejecting claims that the plantations were no longer profitable: they could still be rewarding to their attorneys and creditors, if not to their nominal owners. The estimated rates of return in sugar planting (Table 3) are those accruing to absentee owners, net of charges by the agents and merchants who usually handled most of the routine business. No deductions have been made for any interest payments due on accumulated debt. It was recognized at the time that a merchant-creditor in the West Indian trade could secure higher yields, but these reflected extra risks and managerial functions. By 1833 the acceptable rate of commercial profit lay between 5 and 10%: Report from the Select Committee on Manufactures, Commerce and Shipping, *Parl. Papers* 1833, vi (690), Q. 4158.

⁴⁶ Green, *British Slave Emancipation*, 101-2.

⁴⁷ Ragatz, *Statistics*, 8; P. D. Curtin, 'Sugar Duties and West Indian Prosperity', *Journal of Economic History*, xiv (1954), 159-60; Vassall MSS, W. Vassall to J. Wedderburn, 13 Feb. 1782.

exports slowed markedly as land accessible to the coast became more fully cultivated, and Cuba seemed likely soon to run into similar constraints: the capacity of the railway for opening up land-locked interiors was not yet understood.⁴⁸

Although some of the newly acquired British colonies offered unusually high yields, the quality of their exports was often rather low, as a result partly of inexperience, which might be remedied, but also of local soils and climate. Heavy crops and large proportions of Africans entailed a high rate of natural decrease among the more recently established slave populations, and from 1825 it was no longer permitted in British possessions to import new slaves even by inter-colonial transfers.⁴⁹ The rapid increase of Demerara's sugar exports came largely through the conversion of cotton or coffee estates, a process that had obvious limits. Even the challenge to slavery itself could be put out of mind for the time being. In 1823 the revival of agitation on the issue within Great Britain caused a good deal of alarm among the West Indians, yet soon the matter almost disappeared from their correspondence. The policy attempted by the Colonial Office of inducing planters to improve standards of treatment, as preliminary to an eventual slave emancipation, promised opportunities for endless delay. The scheme was ill suited to retain the interest of a public occupied mainly with issues of domestic politics, and the abuses it brought to light attracted little notice. By the end of the decade the anti-slavery movement seemed moribund, or at least no longer a cause for immediate concern.⁵⁰

Then, quite suddenly, a new sequence of misfortunes began. First, in the latter part of 1829 the price of West Indian muscovado fell sharply once more. Since 1821 it had held steady at about 30 shillings per cwt. exclusive of duty, apart from the speculative upswing in 1825, and as freight and insurance charges were moving downwards, net proceeds to the planter tended to increase. However, prices averaged only 25 shillings

⁴⁸ Henry Koster, *Travels in Brazil* (1816), 336-58.

⁴⁹ D. Eltis, 'The Traffic in Slaves between the British West Indian Colonies, 1807-33', *Economic History Review*, 2nd Ser. xxv (1972), 55-64. Annual output of sugar per slave on plantations in Trinidad and British Guiana averaged about 1,800 lbs., compared with 1,400 lbs. in Jamaica, or 900 lbs. in the Leeward Islands: see below, Table 6.

⁵⁰ W. L. Burn, *Emancipation and Apprenticeship in the British West Indies* (1937), 84-9; Newton MSS, 523/900, R. Haynes to T. Lane, 19 Aug. 1823; Gladstone MSS, CH 153, G 56, G 136, correspondence of J. Gladstone 1823-30; Codrington (Antigua) MSS, C36, correspondence of C. B. Codrington 1828-9.

on the London market in 1830, and 24 shillings in 1831.⁵¹ The immediate cause of this new decline was some unusually large West Indian crops in 1828 and 1829, coming on to a British market restricted by high grain prices and general economic stagnation. Initially dealers carried the excess supplies to stock, but during the early months of 1829 financial conditions were rather tight, so once the year's shipments had been appraised it could no longer be hoped that prices would hold up, and selling became much more aggressive.⁵² Expectations were depressed further by uncertainty over a possible modification of the sugar duties, and in 1830 the bear market became self-reinforcing: as the solvency of merchants involved with the West India trade came under suspicion, many were forced to run down their inventories in order to keep creditors at bay.

To make matters worse, during the same year the anti-slavery movement made a conspicuous recovery, stimulated by growing irritation at colonial intransigence, and reports from the West Indies of attacks on the missionaries who had been sent out to work among the slaves. In November 1830 the downfall of Wellington's administration and the return to power of the Whigs, committed to some measure of parliamentary reform, encouraged a general sense of political excitement. Towards the end of the same month Messrs Plummer and Wilson, an important London firm with connections in Jamaica and the Leewards, stopped payments.⁵³ The belief was spreading 'that Parliament will seriously but favourably consider the question of emancipation; should it so turn out I venture to predict we shall have many other failures that are not yet thought of by those who are most interested'.⁵⁴ In fact the new government for the time being directed its energies elsewhere, but with the wider public the anti-slavery cause gained strength, while bankruptcies multiplied in the sugar trade, produce prices remained wretchedly low, and West Indian property was reported as almost unsaleable. To

⁵¹ Ragatz, *Statistics*, 8; Goulburn MSS, III/2D, factors' accounts 1805-30.

⁵² R. C. O. Matthews, *A Study in Trade Cycle History* (Cambridge, 1954), 202-3; A. D. Gayer, W. W. Rostow, and A. Schwartz, *The Growth and Fluctuation of the British Economy, 1790-1850* (2 vols., Oxford, 1953), i. 236-7; Codrington (Antigua) MSS, C37, J. Liggins to C. B. Codrington, 17 Jan. 1830.

⁵³ R. Anstey, 'Parliamentary Reform, Methodism and Anti-slavery Politics 1829-1833', *Slavery and Abolition*, ii (1981), 209-26; Codrington (Antigua) MSS, C37, Liggins to Codrington, 21 Jan., 30 Nov., 4 Dec. 1830.

⁵⁴ Codrington (Antigua) MSS, C37, Liggins to Codrington, 7 Dec. 1830.

complete the planters' sufferings, in August 1831 a severe hurricane struck Barbados, St Vincent, and St Lucia, and the following year brought news of an extensive slave uprising in the western parishes of Jamaica, with the details of its brutal suppression. Emancipation was such a prominent issue in the general election of December 1832 that the new parliament was bound to take the matter in hand.⁵⁵

There can be no doubt that, from 1830 until at least the final settlement in 1833 of the terms under which slavery was to be abolished a year later, the British West Indian plantation economy suffered an acute crisis, and evidence from this period has been emphasized in some accounts as the final stage of a remorseless decline towards general ruin.⁵⁶ It is argued that the old sugar islands, with their exhausted soils and difficult terrain, could not hope to survive in a more competitive market. Their original prosperity was ephemeral and artificial, a result of the accidents of history that had attached them on privileged terms to eighteenth-century Europe's most vigorous economy and effective maritime power. Once their special advantages were lost it was inevitable that they should be displaced by better-endowed rivals. With the benefit of hindsight all this may be plausible enough. Up to 1815 Barbados, the Leewards, and Jamaica together supplied rather more than a third of the international sugar market; a hundred years later their production was quite insignificant on a world scale. But how fully was this reversal of fortunes anticipated? The dominance eventually achieved by new producing areas would come from enormous increases in the scale and efficiency of processing, through steam-powered mills, the railway, and vacuum boiling, technologies whose development had only just begun in the early nineteenth century. At this stage the consensus among the leading figures of the West India trade was that the longer-established British colonies faced rationalization rather than complete extinction. Some marginal undertakings, established on inferior land to benefit from the protected markets and high prices of an

⁵⁵ E. F. Hurwitz, *Politics and the Public Conscience* (1973), 48-58.

⁵⁶ Ragatz, *Fall of the Planter Class*, 376-9, 439-57; R. B. Sheridan, 'The West India Sugar Crisis and British Slave Emancipation, 1830-1833', *Journal of Economic History*, xxi (1961), 542; Fitzherbert MSS, W1/20, letters to Sir Henry Fitzherbert from Patrick Mahon, his Jamaican attorney. Mahon's reports of 'a state of Bankruptcy' (26 Oct. 1830) and 'great distress' (10 Aug. 1831) contrast with his calm tone in previous years.

earlier period, were obviously doomed in the harsh new commercial environment, but the main body of estates still offered reasonable prospects for the future.

It might seem that these expectations were discredited by the calamities of the early 1830s, yet long-term tendencies—or contemporary perceptions of those tendencies—cannot be safely inferred from an episode so thoroughly complicated by speculative market movements and the argument over slavery. By 1834 West Indian sugar prices were back to their level of the 1820s, with the overhang of accumulated stocks largely eliminated, and a more prosperous home market to serve. The planters may have declared that without slavery they would be ruined, but many were to persevere with wage labour. It was admitted after the event that much of the decline in property values about the time of emancipation resulted from confusion and uncertainty, rather than any clear sense of the probable outcome.⁵⁷ As the commercial crisis deepened early in 1830, John Gladstone received advice that he should take the opportunity to acquire new West Indian investments at cut price, and while attempting this he was outbid at least once, in 1833, by another merchant.⁵⁸ When Messrs Plummer and Wilson announced that they had stopped payment, 'borne down by the weight of advances to estates which from the continuing depreciation of successive years have neither reduced their debts, nor paid their interest', they declared their aim of reconstituting the firm to deal only with good accounts. Shortly afterwards they were back in business once more. Hope still lingered on among the West Indians.⁵⁹

⁵⁷ Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), Q. 2951.

⁵⁸ Gladstone MSS, G 56, R. Gladstone to J. Gladstone, 13 Mar. 1830; Checkland, *The Gladstones*, 274.

⁵⁹ Romney MSS, E 309, Plummer and Wilson to Lord Romney, 25 Nov. 1830; Hankey, Plummer, and Wilson to Lord Romney, 18 Sept. 1838; Clarendon MSS, Dep. c 389(5), W. Wilson to J. F. Barham, 21 Dec. 1836. According to Lewis Loyd, banker in London and Manchester, '... in every case where the great gains of the West India trade were properly husbanded during the war, the West India trade is in affluence at this moment; but when the West India trade during the war yielded immense profits, a great many houses spent the profits as they were made, and when the trade turned they sank; but there are instances, and a great many in London, of persons who husbanded the gains of the West India trade during the war, and are in great affluence at this moment.' Report from the Select Committee on Manufactures, Commerce and Shipping, *Parl. Papers* 1833, vi (690), Q. 492.

In this chapter British West Indian sugar planting has been considered mainly in terms of the external influences operating upon it, because evidently they had a decisive effect on the estates' fortunes. It is clear also that much of the older colonies' resilience on the eve of emancipation was essentially a passive strength, deriving from their earlier reputation as sources of great wealth, and from the momentum of long-established commercial arrangements. Profits at the rate of 4 or 5 per cent may have induced many of those already involved to continue, but they were not likely to attract much new enterprise. Nevertheless the planters did not remain completely immobile in the face of adversity. There were attempts to improve techniques and raise efficiency, including important changes in standards of treatment for the slaves. Without these measures so much of the plantation economy could not have survived, and the legacy of slavery to the years of freedom would have been very different. We shall now turn to examine the course of amelioration and reform.

New Husbandry

IN general terms the erosion of commercial privilege offered a common threat, or a common challenge, to the owners of plantations in all the original British West Indian colonies: if their estates were to survive they would have to produce sugar more efficiently and more cheaply. Furthermore, after the closure of the trade from Africa, technical improvement would obviously have to include a slave population that was better maintained, and in particular better fed. However, local geography gave rise to variations in the planters' capacity for effective response, and in the directions which any process of adjustment could take. These differences were most pronounced with cane cultivation, which will be considered separately for each island. Processing was affected by a more uniform set of technical constraints and can be dealt with in a regional perspective. Slave feeding is best taken as a component of estate agriculture, even when purchased supplies or the slaves' semi-independent activities were important.

BARBADOS

By the middle of the eighteenth century the planters of Barbados had fallen on hard times. After decades of over-cropping it seemed that they could only secure a livelihood by keeping at least half of their exhausted fields under canes. Yet with so little land left for pasture, supplies of animal manure were insufficient to do justice to the cultivation, and the slaves suffered from the poverty of masters who could neither buy nor grow adequate provisions.¹ As a rule, light crops at least meant easier work, but this was not the case in Barbados, even though the output of sugar per slave was less than half that of other

¹ See above, ch. 2 nn. 21, 31.

islands. Two-thirds of the cane pieces were replanted each year in order to maintain yields, and because of the difficulty in keeping livestock, the field gangs got little assistance from animal haulage. At crop time in Barbados, as the rather sententious Samuel Martin of Antigua observed,

some planters . . . are so ingeniously thrifty as to carry their canes upon negroes' heads; not only degrading human nature to the toil of brutes, but acting, in that respect, diametrically opposite to their own apparent interest, which cannot be served more effectually, than by saving the labour of human hands in all cases where the labour of brutes can be substituted.²

Yet by the time of emancipation the island's prospects and reputation had been transformed. It was the only British West Indian territory, apart from Trinidad and British Guiana, where profits and export volumes were rising, and the only sugar colony, without exception, to achieve a rapid growth in slave numbers through natural increase.

Both in the field and in the boiling-house, the system of the Barbadian planter is many degrees in advance of those of the colonists of the other islands. In the management of their slaves, *as slaves*, the Barbadians equally excelled. Like good farmers, they bestowed the same attention upon them as upon their cattle. . . . Their aim was to keep them in the highest possible working and breeding condition, in which they succeeded . . .³

The first experiments in agricultural improvement on Barbados began about 1770, with the aim of raising more food locally, a concern reinforced by the disruptions to trade during the American War of Independence and the severe hurricane that struck the island in October 1780.⁴ During the subsequent

² Martin, 'Essay on Plantership', 243. Antigua often suffered from drought, and a visitor there in Martin's time noticed that its 'poor negroes' had to carry large vessels of water from considerable distances to cool the rum stills: U. B. Phillips, 'An Antigua Plantation, 1769-1818', *North Carolina Historical Review*, iii (1926), 443 n. 11.

³ J. Sturge and T. Harvey, *The West Indies in 1837* (1838), 153.

⁴ Sources for the following account of agricultural developments on Barbados include Bennett, *Bondsmen and Bishops*, 101-3; Davy, *West Indies*, 108-38; Klingberg, *Codrington Chronicle*, 63-82; Sheridan, *Sugar and Slavery*, 146-7, 380-1; G. Pinckard, *Notes on the West Indies* (2 vols., 1816), i. 283-300; O. P. Starkey, *The Economic Geography of Barbados* (New York, 1939), 94-115; Report of the Lords of the Committee of Council . . . concerning . . . the Trade in Slaves . . . (subsequently cited as Privy Council Report), *Parl. Papers* 1789, xxvi (646a), pt. III, Barbados; Fitzherbert MSS, W1/17, papers of Turners Hall Plantation

rebuilding innovation became general. Its central feature was a reduction in the total cane acreage, with an increase of ratoons, at the expense of plants. This made more land and labour available for food crops, mainly Guinea corn, and gave some relief to gangs weakened by the recent emergencies. The extra corn required less effort than the sugar-cane which it replaced, and provided a quickly growing substitute for the plantain walks—hitherto an essential resource—after their destruction in the storm of 1780. Such measures were likely to reduce consignments even further, but profits had to be sacrificed if the estates were not to disintegrate completely.

Yet, in the event, the planters were to suffer much less than they had expected, for after reaching a nadir in the early 1780s, the volume of sugar exports from Barbados rose strongly, reaching its pre-war levels by the end of the decade and then doubling over the next forty years. The island's slave population, on the other hand, rose by no more than 20 per cent between 1775 and 1830. This increased productivity was achieved without impairing the commitment to extra food growing and a less severe work regime embodied in the original reforms. The canefields were not allowed to recover their share of estate land, but yields of sugar per acre of cane cut improved from 700 lbs. before the American war to 2,000 lbs. by the later 1820s, despite the new emphasis on ratoons. In the 1770s, for every adult field labourer on his estate, the planter expected roughly one acre of land to be holed for replanting each year, and 800 lbs. of sugar produced; half a century later the corresponding figures were a third of an acre to be holed, and 1,750 lbs. of sugar produced. It is true that some 40 per cent of the long-term output growth must be attributed to the replacement of clayed sugar by the less refined muscovado as the main export from Barbados.⁵ Also from the 1790s the island had the quite fortuitous benefit of new and

1753-1834; Newton MSS, esp. 523/277-92, reports and valuations of Newton and Seawells plantations 1784-1803.

⁵ Ragatz, *Statistics*, 19-20; Starkey, *Barbados*, 102; Newton MSS 523/290, 'Report on the Buildings at Newton Plantation', 1796, fos. 2-4. The shift from clayed sugar also entailed a reduced proportion of rum output. These adjustments were encouraged from 1775 by a decline in the British demand for clayed sugar to use with coffee and by the difficulties in the North American rum trade, and in the 1790s by the arrival on the London market of East Indian produce similar in quality to West Indian clayed sugar. For the population of Barbados see Sheridan, 'Crisis of Slave Subsistence', 620, and Higman, *Slave Populations*, 417-18.

more rewarding cane types, such as the Otaheite, introduced from the South Pacific, and the Bourbon, from the French colony of the same name in the Indian Ocean.

Nevertheless the planters must still be credited with a significant achievement in reform, because experience elsewhere showed that without appropriate modifications of technique the new cane species could do more harm than good. They made heavy demands on the soil, requiring more manure than the traditional creole varieties, and thus a larger, better-fed stock of animals. So livestock and food growing in combination provided the key to the regeneration of sugar planting on Barbados.⁶ Extra cattle, mules, and horses were introduced to assist with haulage as part of the reconstruction during the 1780s. They could be maintained more generously with foliage from the enlarged areas of Guinea corn, or secondary crops such as sweet potatoes and yams. After the turn of the century pastures were enhanced by the propagation of sour grass (*Andropogon pertusus*).⁷ All this established a cumulative process of improvement in soil structure and fertility: with a greater proportion of organic matter the land was more easily worked and better able to retain moisture to sustain crops through a time of drought; with heavier crops more fodder and compost became available, and so on. The vicious circle in which Barbados planting had become trapped was broken.

ANTIGUA

Where agricultural progress occurred in the other sugar islands it rested upon the same basic principle—the movement towards a better balance between cane growing and complementary activities. We may continue with Antigua, the colony which resembled Barbados most closely in climate and terrain, and follow the course of change on the unusually well-documented Parham estate. This property, which in the eighteenth century consisted of about 800 acres lying on the eastern side of the island, belonged to the Tudway family of

⁶ For the new canes and their tendency to exhaust the soil see Starkey, *Barbados*, 108; Pares, *West-India Fortune*, 110–11. For Jamaican experience see below.

⁷ Starkey, *Barbados*, 41–2.

Wells in Somerset.⁸ The first extant run of correspondence starts in 1717, showing a plantation still in the process of settlement and expansion. Between 1719 and 1776 the number of slaves increased from 140 to 533, while annual sugar output rose in proportion, to about 5,000 cwts. At some time around 1750 the enterprise was divided into the Old and New Works, each with its own windmill and boiling house. Clearly this intensification of the sugar economy was at the expense of food growing. In the 1720s managers were still planting substantial acreages of Guinea corn, and allowed to order out extra provisions from England only in emergencies, usually caused by drought. However, by the middle of the century virtually all regular food growing on the estate's account seems to have come to an end, and although the slaves still had grounds of their own, from which they were expected to subsist through four or five months of the year, they had come to depend heavily upon imported supplies. About seven bushels of English beans or American corn were bought annually for each slave, at a total cost by the 1770s of £550, one of the largest items of plantation expense. Yet with high yields and rising sugar prices comfortable profits remained.⁹

These arrangements seemed quite satisfactory until political unrest gained momentum among the North Americans. In 1774, under the threat of a trade embargo, Parham's attorneys were urged from England to follow Barbados practice by increasing the share of plant canes and eliminating second ratoons, thus releasing good land for food crops at least cost to the sugar harvest. They received this advice unenthusiastically, pointing out the labour entailed by large plants, and the fate of the exemplar: 'Barbados has been ruined by working the land too hard and now makes very little . . .'.¹⁰ Even so, the owner had his

⁸ The following account is based upon the Tudway MSS, in particular Boxes 8-10, plantation accounts 1689-1827; Boxes 11, 15, correspondence 1717-1836; Box 13, invoices of supplies from England; Box 14, Monthly Journals of Plantation Works 1823-9; Box 56, miscellaneous papers of the 1820s and 1830s. Clement Tudway succeeded his father Charles in 1770.

⁹ A survey of the cane pieces at Parham in 1743 (Tudway MSS, Maps) describes 16 of 243 acres as 'negro land', and 11 acres as 'to be planted in potatoes', but these were probably special wartime measures. For similar contemporary instances see Sheridan, 'Letters from . . . Antigua', 15 May 1745, 20 Aug. 1748. For Parham's profits see Ward, 'Profitability', 210-11.

¹⁰ Tudway MSS, Box 15, Letter Book from Antigua 1759-1784, F. Farley to C. Tudway, 28 Sept. 1774; M. S. Walrond to Tudway, 25 Aug. 1774.

way and the second ratoons were eliminated, but the initial experiments with food growing led to disaster. In 1775 worms destroyed fields of peas and potatoes; then followed a period of exceptionally severe drought, deliveries of North American corn were curtailed by the war, and extra beans ordered from England proved insufficient. During the most critical time, between the summer of 1779 and the autumn of 1780, a tenth of the estate's slaves perished, mainly through an epidemic of dysentery caused by the scarcity of both food and drinking water, while the survivors were in such a wretched condition that a whole season's sugar crop was lost.¹¹ From this point a slow recovery began, brought to some extent by more regular rainfall and a resumption of the North American trade, but helped on its way by adjustments in the pattern of agriculture. Apart from the reduction of ratoons there was a new emphasis in the attempts to produce food: thirty acres of yams were planted regularly from 1781, and although not completely reliable, they proved much more useful than corn or potatoes.¹²

The advantages from the modified style of planting became obvious enough, but for the time being no one was inclined to push it much further. There were complaints that the need to attend to the yams held back the sugar harvest: during the 1780s and 1790s it never seemed possible to restore yields to their pre-war levels.¹³ In any case imported supplies became once more as cheap as they had ever been, relative to the selling price of sugar, and the customary rate of profit was restored. A renewal of external pressures was necessary to induce a further round of reforms. First came the fall in the sugar market from 1799, followed by new difficulties with the North American trade. In 1812 G. W. Ottley, the current manager, proposed to carry to its logical conclusion the line of development first undertaken during the 1770s: ratoons would be displaced entirely by plant canes, to secure both higher yields of sugar and, with even more land released for provisions, virtual self-sufficiency in basic foods.¹⁴

¹¹ Sheridan, 'Crisis of Slave Subsistence', 623-4; Tudway MSS, Box 15, Walrond to Tudway, 19 Oct. 1775; Box 9, stock accounts 1776-83.

¹² Tudway MSS, Box 15, Walrond to Tudway, 28 Nov. 1781, 26 June 1782, 29 Apr. 1784; Box 11, Antigua correspondence, S. Eliot to C. Tudway, 1 May 1787, 15 Nov. 1797.

¹³ Tudway MSS, Box 15, Walrond to Tudway, 26 June 1782.

¹⁴ Tudway MSS, Box 11, T. N. Kerby to C. Tudway, 20 May 1812; G. W. Ottley to Tudway, 29 May 1812.

Apparently this scheme was rather too ambitious, for the ratoons were reduced rather than eliminated, although Ottley did succeed in raising sugar production some 50 per cent above the volume achieved by his immediate predecessors. However, for reasons that were never clearly established, only very slight savings were made in food purchases, while other categories of expenditure rose to unprecedented levels. Some special investments were entailed by the purchase of a neighbouring plantation made at about this time, and when Ottley arrived at Parham much of the cane land had been infested by savannah grass, with roots going two feet deep. So much labour was required for its eradication that little could be spared to extend the food crop, and it seemed best to maximize consignments at no matter what cost, to take advantage of the high sugar prices that prevailed temporarily from 1813. Perhaps also there was slackness or worse on the estate, for Clement Tudway, the proprietor since 1770 and a close scrutineer of papers from the West Indies, died in 1815. His nephew John Payne Tudway, to whom the plantation passed, showed much less concern with detail.¹⁵

For whatever reason, Ottley was allowed to continue undisturbed, until the deflation of the early 1820s eliminated profits and spurred the new owner into commissioning an inquiry by his London factors. Their report, covering more than thirty pages, was clear and thorough, although it worked rather too hard at avoiding a patronizing tone:¹⁶

... a new plan of cultivation has been practised on some estates in the island of late years, by which the extent of the provision grounds is increased half, and the sugar crops more; and it is clear from the increase of the sugar crop on Mr Tudway's estate since 1813 ... that the new plan has been adopted there ... (in all probability Mr Tudway has been consulted on the change). ... It was the old plan (in the island generally, I mean), as I am informed (Mr Tudway will be much better informed upon the subject), dividing the estates into *three* parts, to appropriate these respectively (in alternate crops) to the cultivation of provision, plant canes, and ratoons; but the modern plan distributes the estates into *two* parts, appropriated respectively to provisions and plant canes, with the total omission of ratoons. The *advantages*

¹⁵ Tudway MSS, Box 11, Ottley to Tudway, 1 Feb. 1809; Namier and Brooke, *History of Parliament*, iii. 566.

¹⁶ Tudway MSS, Box 56, Bundle 8, 'Mr Swanston's Observations'.

intended to be gained by the latter plan are, an addition to the quantity of provisions grown, in the proportion of half . . . and an addition to the quantity of sugar, not only in the proportion of the same superior quantity of land appropriated to the plant canes, but in proportion likewise to the superior productiveness of these beyond ratoons. The *disadvantages* consist in the inferiority of the colour of the sugar made from plant canes, to that made from ratoons, and also in the greater degree of negro labour necessary in the cultivation of plants.

But the factors could find no reasonable explanation for the enormous growth in operating costs, from about £5,000 a year before Ottley's accession in 1806 to £11,000 in 1820, and their one specific proposal was for closer supervision by a new method of reporting, to supplement the customary annual account and irregular correspondence. Again they were at pains to give their employer a reassuring sense of conformity with current practice:

In order to obtain an insight into the course of their affairs, and to have it in their power to exercise promptly an efficient control when requisite, it has for some time been the practice of several proprietors resident here, to have sent home to them *monthly* a return exhibiting the manner in which the estate is cultivated, with the proceedings in its cultivation, the daily occupations of the negroes and their state of health, increase or decrease, the numbers of the livestock with their increase or decrease also, and quantities of sugar and rum produced, and the quantity of stores received and expended during the month and remaining, with the manner in which they have been used. This practice is now so common, that printed forms of such returns are to be met with at the stationers in several varieties; one of which, the clearest and fullest that I have seen, I transmit with this.

These forms were sent out to Antigua as suggested, along with a stiff letter from Tudway repeating most of the points made by his advisers, and evidently succeeded in putting the manager and subordinate overseers on their mettle, for the returns made from 1823 show a much more economical system.¹⁷ During the last decades of the eighteenth century

¹⁷ Plantation journals entered on printed forms became increasingly numerous in West Indian archives during the later 18th century. The earliest example that has come to light is from St Kitts in 1777: Stapleton-Cotton MSS, Bundle 22. The following details

Parham had some 570 acres that were reckoned to be capable of growing sugar. At any particular moment about 40 acres of these were under food crops while the remainder, divided into thirds, was devoted to canes, that is 175 acres each in plants and first ratoons, for harvesting in the current cycle, and a further 175 acres intended for the subsequent crop. A cane piece growing ratoons was cut early in the year; it then usually lay fallow until holing began in July or August. By October or November it should have been planted, to be ready for cutting some sixteen months later. (The factors' description of the 'old plan' as a division into three apparently equal parts—plant canes, ratoons, and provisions—was therefore not quite accurate for the Parham estates.) The average annual yield of muscovado was about 4,200 cwts., or 1,350 lbs. per acre of cane cut, and 900 lbs. for each slave on the estate. By the 1820s, although the potential sugar land had been increased by purchase to 740 acres, the extent of canes cut each year had risen only slightly, from 350 to 380 acres. But sugar output had risen 50 per cent to give a yield of nearly 1,900 lbs. per acre and 1,230 lbs. per slave. Even more striking was the increase of provision crops to 280 acres, from the 40 acres of the 1780s and 1790s (and much less than this before the American War of Independence), with the result that annual purchases of corn and beans, noticed in the factors' report as such a heavy charge, had been cut from 4,000 to 800 bushels. At current prices the reduction of food purchases meant an annual saving of some £800, while the extra sugar and rum produced was worth some £2,500, after allowing for their reduced quality. By the later 1820s Parham had been brought back into profit at the rate of £4,000 or £5,000 a year (Fig. 3), only half of the average reached in the 1790s, but sufficient to keep the estate in business. Without the agricultural changes its survival would have been very doubtful.

It is clear that, as in Barbados, the enlarged provision crops were an essential part of the programme of reform. Apart from allowing the planter to spend less on imported food, they helped indirectly to raise yields on the land devoted to sugar. By themselves the new cane varieties could contribute little: at Parham, although the whole planting was apparently in Otaheite after

about Parham in the 1820s are taken from the estate's *Monthly Journals* 1823–9 and its accounts 1824–7: Tudway MSS, Boxes 10, 14.

1796, a sustained rise in production only came with the later and more comprehensive changes. But apart from these general points in common between Barbados and the Antiguan estate there were also some important differences. Firstly, Parham's increase of 40 per cent in the yield of sugar per acre was much less spectacular than the 300 per cent improvement achieved in Barbados, because the Antiguan soils had never become so chronically exhausted and there was not the same scope for recovery. (Despite the Barbados planters' greater emphasis on ratoons, which by the 1820s occupied between 50 and 70 per cent of the cane land harvested here, the colony's average sugar yields per acre came to exceed Antigua's. On Barbados rainfall is more reliable, and its high ratio of labour to land encouraged the most careful cultivation.) Secondly, the displacement of imported food by local supplies was greater at Parham, because Barbados planters in the eighteenth century had not been able to afford such heavy purchases.¹⁸ Thirdly, the general direction of change at Parham apparently required more labour, as the factors' report recognized. In Barbados ratoons were increased at the expense of plants, to reduce the burden of holing imposed upon the slaves, but at Parham it was the plants that gained ground, from half the area cut in the 1780s to 60 per cent in the 1820s, providing one source of the improvement in yields. Moreover, Parham depended to a greater extent on the relatively arduous root crops, with 70 per cent of the food land in yams and eddoes, while in Barbados Guinea corn became the staple.¹⁹ So how was it possible to meet these extra demands on the work-force?

One characteristic of Antiguan planting arose from the fact that the colony's seasonal weather pattern is rather less marked than that of most other West Indian islands, with not quite the same probability of heavy rainfall during the second half of the year, or the same need for an early end to the sugar crop. Although in the eighteenth century local men paid lip service to the doctrine of a compressed spring campaign, their practice was rather casual. Operations were usually suspended in August,

¹⁸ See above, ch. 2 nn. 30, 31.

¹⁹ Some yams and other root crops were grown in Barbados, but they were of secondary importance: Bennett, *Bondsmen and Bishops*, 102; Klingberg, *Codrington Chronicle*, 76.

to take down the sails of the windmills as a precaution against hurricanes, but an autumn resumption to take off any remaining canes was not thought particularly shocking.²⁰ Therefore as food production became more obviously desirable the Antiguan planter had the advantage over his counterpart in Barbados of a cultivation cycle that could be stretched more easily. By the 1820s Parham was sometimes milling from one year's end to the next (for example, at New Work the crop of 1825 continued well into the January of 1826), and the gangs were never restricted to work on the sugar harvest for more than a few days at a time. They might even be moved from cutting canes in the morning to working a field of provisions in the afternoon. Such flexibility made it much easier than in Barbados to accommodate the various phases of yam growing.

In 1782 Parham's manager grumbled at the way in which the yams interfered with what he thought to be his real business of making sugar with all due speed, and gave this as a reason against extending them any further.²¹ However, the argument could not be sustained when the advantages of estate-grown food supplies became clearer, especially after the new canes had been introduced during the next decade. It was found that these varieties matured more rapidly than the old, so there could be a longer interval between the sugar harvest and the subsequent replanting. Apart from their rather heavy cultivation requirements, the other difficulty with yams had been that they required a growing period of from six to twelve months, compared with three to six months for potatoes, beans, or corn. But with Otaheite or Bourbon cane this was a much less serious consideration and yams, more resilient against parasites and adverse weather, increased their advantages as a break crop on sugar land. They could also help to clean the soil and reduce the incidence of cane diseases.²²

Another of Parham's advantages, shared with most of its neighbours on Antigua, was a relatively level terrain and light, stone-free soils, highly suitable for ploughing once a solution

²⁰ Tudway MSS, Box 15, Letter Book from Antigua 1759-1784, M. S. Walrond to Charles Tudway, 10 Nov. 1766; to Clement Tudway, 25 Aug. 1774.

²¹ Tudway MSS, Box 15, Walrond to Tudway, 26 June 1782.

²² Davy, *West Indies*, 124-6; N. Deerr, *Cane Sugar* (Altrincham, 1911), 134, 156; G. Wrigley, *Tropical Agriculture: The Development of Production* (4th edn., 1982), 112.

was in prospect for the problem of fodder supplies. On Barbados most planters were said to have become quickly disillusioned with the plough, after some trials induced by the abolition of the slave-trade in 1807, believing that it caused poor crops and was unsuitable for local conditions.²³ However, at Parham during the 1820s the monthly journals show that teams of slave ploughmen were responsible for loosening all but the most difficult cane pieces, before the main gangs were sent in with their hoes to prepare the land for planting. These tasks were assisted by the preceding crops of yams, whose foliage and deep roots kept the soil from being compacted by sun and rain into an unyielding mass, as happened with the traditional bare fallows. Further gains were made in manuring. During the eighteenth century about half of each year's plants had been laboriously dunged by hand, but as more compost became available it could simply be ploughed in, or a single complete manuring might be made to last for several crops. So now it took only twenty slaves to prepare and plant an acre of canes or yams in a day, compared with the sixty or seventy required by the old methods. This was the principal source of efficiency improvement, and the main reason why in the 1820s Parham's 180 field labourers, without any signs of increased strain, could harvest each year 380 acres of cane, replant 230 acres of these, and cultivate also 280 acres of provisions, apart from their own grounds. Their equally numerous predecessors of the eighteenth century had been almost fully occupied in harvesting 350 acres of cane, and replanting 175 acres, with time to spare only for a few dozen acres of food crops besides.²⁴

²³ Davy, *West Indies*, 113-14; Bennett, *Bondsmen and Bishops*, 103. The plough was however retained on some estates. At Turners Hall in 1832, as a result of ploughing over the last several years, the movement of soil had been so great that it was difficult to get carts into the fields to bring off the crop: Fitzherbert MSS, W1/17, R. A. Alleyne to Sir H. Fitzherbert, 24 Jan. 1832.

²⁴ There were also productivity gains in other tasks, e.g. cane cutting and processing: see below, Fig. 11. The average complement of slaves at Parham was 423 in the 1760s, 493 in the 1780s, and 574 in the 1820s, but during the last period only 31% of the population were regular field workers. Fifty-two per cent were categorized as more or less ineffective, including the sick, aged, and invalid (15%), children under 12 (28%), and pregnant or nursing women (9%). For most of the 18th century Parham was regularly buying in new slaves, keeping its proportion of active labourers at between 40 and 50%. The journals of the 1820s show that over the course of a year land in provisions required rather more attention than an equal area of canes, and occupied nearly half the time of the field gangs.

No other Antiguan estate has been found whose practices can be followed in quite the same detail, but there are many indications that Parham's history belonged to a broader pattern of change; this was why the tightening of control after 1820 produced such quick results. In the middle decades of the eighteenth century the Antiguan Samuel Martin made some well-publicized attempts at innovation through the use of the plough, grass fallows, and benevolence towards his slaves.²⁵ He was especially eloquent on the advantages of provision growing:

... it is the incumbent duty of a good planter to have always his stores well filled with Guinea corn, yams, or eddas, besides potatoes growing in regular succession: for plenty begets cheerfulness of heart, as well as strength of body, by which more work is effected in a day by the same hands, than in a week when enervated by want and severity. Scanty meals of New England corn may sustain life; but it is our own produce only which can impart athletic vigour ...²⁶

But Martin's efforts with the plough failed, and a Jamaican planter in transit through Antigua in 1775 found very little food grown there.²⁷ Nevertheless, after the emergencies of the American war the Codrington family's plantations on the island cultivated enough yams to keep their 900 slaves for six or seven months of the year.²⁸ If more food was to be raised, then the extent of relatively unproductive ratoons had to be cut back, and this appears in the modification of the terms under which another local property was leased. In 1768 a tenant of the Williams plantation had been required to replant little more than a fifth of the canes each year. When this agreement came up for renewal in 1789 it was allowed to continue as before, 'except the covenant as to ... leaving the sugar cane plants and ratoon cane sprouts, which from the improved mode of cultivation that had for several years past been used in the said island of Antigua would require some alteration'.²⁹

According to Edwards, writing of the colony in the 1790s,

²⁵ R. B. Sheridan, 'Samuel Martin, Innovating Sugar Planter of Antigua, 1750-1776', *Agricultural History*, xxxiv (1960), 126-39.

²⁶ Martin, 'Essay on Plantership', 239-40.

²⁷ Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Antigua, No. 43; Slebech MSS, 9402, Nathaniel Phillips's Journal, 15 Nov. 1775.

²⁸ Codrington (Antigua) MSS, C20, 'Observations on the Accounts for 1782'.

²⁹ Nantes-Wylde MSS, leases of Williams plantation 1768, 1789.

'they raise in favourable years great quantities of provisions',³⁰ and the attorney of the Codrington estates was able to face the next wartime disruption in the American trade with equanimity: 'To us, whose lands bear the yam, no distress as to negro provisions can, with moderate good weather, ever happen ...'.³¹ Following the return of peace in 1815 further progress was made through the immigration of Scottish ploughmen and the instruction of slaves in their skills.³² Some proprietors also brought in managers from Barbados, as the most conspicuously successful centre of improved husbandry. These recruits may have been useful enough, although their fervent Anglicanism and hostility to Methodist missionaries gave offence in a colony which took pride in its habits of religious toleration. Their agriculture did not however seem very surprising. The balance between cane and provision land was little changed, the rotations were familiar. At most, a new spirit reinforced tendencies already well established: 'I believe the whole Mystery of the "Barbados Plan" is comprised in the Words, Zeal & Industry'.³³

ST KITTS

Of the other Leeward Islands St Kitts was equal to Antigua in economic importance, but quite different in its methods of agriculture. The island comprises a single mountain ridge of volcanic origin, exceeding 3,000 feet at its highest point, and with soil of extraordinary potential fertility. Most plantations had been laid out as narrow strips of land running up the slope 'from the sea into the clouds', providing an insurance against the year-to-year variations in rainfall that could be so damaging elsewhere: in a period of drought crops might suffer on the lower fields, but at

³⁰ Edwards, *West Indies*, i. 484.

³¹ Codrington (Antigua) MSS, C33, S. Martin to C. B. Codrington, 7 July 1809.

³² G. R. Porter, *The Nature and Properties of the Sugar Cane* (1831), 293-7.

³³ Codrington (Antigua) MSS, C37, J. Liggins to C. B. Codrington, 16 Nov. 1830; Green, *British Slave Emancipation*, 55 n. 64. There are incidental references to the plough at Parham from the late 18th century, but its regular use there seems to date from about 1820. The 'Inventory of Plantation Utensils, Stores, &c on Parham New Work Estate 1st Jany. 1824', fos. 6, 9 (Tudway MSS, Box 53), lists 5 plough animals, all imported since 1820, and 6 ploughs, four of them broken. The 'Appraisement of the Slaves belonging to the Plantation called "Martin Byams", Antigua 1830' (PRO, T. 71/1542) lists 3 ploughmen.

higher altitudes conditions were likely to be favourable. In the 1760s annual yields of sugar averaged about 1,600 lbs. per slave and 3,200 lbs. per acre of canes cut, much more than in any other of the original British West Indian colonies. Also consignments—for example, the fabulous ‘mountain grey’ muscovado—were of a special quality, much in demand by English refiners to mix with the produce of other islands, and carrying a large premium in the market. Yet the cane juice was so rich and easily processed that masters felt free to leave their slaves in the boiling house without any supervision, although the doors were locked as a precaution against theft. With such advantages the planters of St Kitts enjoyed exceptional rates of profit—as much as 15 or 20 per cent on invested capital—and threadbare visitors from Barbados marvelled at the lavish entertainments offered by their hosts, most of whom were the salaried managers of absentees.³⁴

This prosperity was however secured by methods that would prove quite unsuited to the changing circumstances of the later eighteenth century. The island’s volcanic soils are rather loose and porous, requiring repeated additions of organic matter for a successful cultivation, so local planters were noted for their close attention to manuring. Every possible ingredient was carefully husbanded: animal droppings, spoiled provisions, ashes from the boiling house, calcined bones, and discarded clothing. Considerable quantities of coal were imported to save on the use of cane-trash as fuel in the manufacture of sugar. Fields intended for cane were dunged at the rate of seventy or eighty tons per acre, three times more heavily than in Jamaica during the 1770s, and most plantings were renewed after a single crop without any ratoons.³⁵ These practices counteracted the advantages in tillage that might have come from a relatively friable soil structure. Deep holes or trenches had to be dug to take the extra volume of manure, and the distribution of this material was especially difficult. Elsewhere the burden of transport from the dung heaps to

³⁴ Senhouse MSS, Memoirs of Joseph Senhouse, vol. ii (1776–9), fos. 206–37: account of his tour from Barbados to St Kitts, 24–30 June 1778. For the general character and development of sugar planting on St Kitts see E. V. Goveia, *Slave Society in the British Leeward Islands at the End of the Eighteenth Century* (New Haven, Conn., 1965), 118–36; Ramsay, *Essay*; Bodrhyddan, Estridge, Romney, and Stapleton-Cotton MSS; Slebech MSS, 9402, Nathaniel Phillips’s Journal, 20 Nov. 1775.

³⁵ *Journal of a Lady of Quality*, 127; E. Long, *The History of Jamaica* (3 vols., 1774), i. 441.

the area of cultivation might be eased by folding livestock on or near the fields that were intended for replanting, but the steep slopes of St Kitts often made this impracticable, and the custom was to keep the cattle pens near the main works at the lower part of the estates, for the convenience of the white overseers. From here the slaves had to climb the hillsides with their dung baskets. The importance of manure and well-maintained livestock also gave special weight to the evening grass collection. According to James Ramsay, a resident in the colony over two decades, this was the greatest hardship that the slaves endured there, and the most frequent cause of running away.³⁶

The one palliative to slavery on St Kitts was a slightly better standard of feeding than in the other islands. With their own prosperity apparently assured, masters felt that they could afford a little indulgence on this point, and calculated that extra allowances would help their gangs to sustain a particularly demanding labour regime.

Formerly, before we became such accurate planters, and before luxury had rapaciously converted every little nook of land into sugar, the slaves had a field or two of the fallow cane-land yearly divided among them, for a crop of yams, peas, and potatoes; and a field of the best cane-land was annually put in yams, to be reserved for their weekly allowance.³⁷

Yet the conviction that food crops should not be grown on cane land, except during wartime emergencies, became even more firmly established than in Antigua. By the mid-century the only regular sources of local supply were the slaves' gardens, scattered up the highest reaches of the mountain ridge and the deep gullies which ran through many estates. But they were supplemented by a volume of imported provisions which, relative to the island's population, was roughly twice that of deliveries to Antigua, and three times greater than those to Barbados. Furthermore, on St Kitts there was not the same emphasis given to the cheapest, coarsest articles, such as horse-beans or Indian corn. Imports of preserved fish ran at 80 lbs. per caput, compared with only 40 lbs. elsewhere. Usually the white

³⁶ Ramsay, *Essay*, 73-4; Stephen, *Slavery*, ii. 116-17, 167; Goveia, *Leeward Islands*, 118-19.

³⁷ Ramsay, *Essay*, 78-9.

people took most of the wheat flour, bread, and rice, but on St Kitts these delicacies were seen as a useful way of preventing outbreaks of dysentery among the slaves during the rainy season, and accounted for more than half of the expenditure on imported food.³⁸

St Kitts went further than any other of the British West Indies towards a sugar monoculture, and the mid-century combination of enhanced export demand and stable import prices was most rewarding to its planters. They do not seem to have been seriously disturbed by the events of the 1760s and 1770s: their profits were too high for investment in the Ceded Islands to represent a convincing challenge, and even during the American War of Independence income was maintained quite comfortably. St Kitts escaped the natural calamities that affected so many of its neighbours, while higher prices for sugar and rum compensated for the extra cost of imported supplies.³⁹ Much more damage was done by the appearance in the 1780s of the borer worm. This cane parasite had already become familiar elsewhere in the eastern Caribbean—allegedly a violent storm drove it from Dominica to the Leewards in 1786—but its impact was exceptionally severe on some of the richest and most heavily manured properties of St Kitts, which hitherto had been noted as free of all vermin except rats. On the Estridge estates, for example, output was cut in the later 1780s to little more than half of its previous level, although over the island as a whole reductions seem to have been rather less than this.⁴⁰ The subsequent propagation of Otaheite cane alleviated the problem, but only to a limited extent, so planters met the inflated operating costs of the Napoleonic period without the strength in revenues that had carried them through the much briefer American war. Finally, the closure of the Atlantic slave-trade in 1808 presented special difficulties, for St Kitts had relied upon it as a way of keeping up the labour force to a greater extent than most other fully settled colonies.⁴¹

³⁸ Bodrhyddan MSS, especially the correspondence for 1793–7; Stapleton-Cotton MSS, Bundles 22–4, especially Bundle 22, J. Bryan to Lady Stapleton, 4 Nov. 1776; PRO, T. 64/48–9, T. 1/489, 493, 498, 502, 507, 509, 512, Naval Office Shipping Lists for St Kitts 1772–4, Barbados and Antigua 1772–5. For fish imports see below, Table 7.

³⁹ See above, ch. 3 n. 8.

⁴⁰ Estridge MSS, D/EM Z 16, accounts of sugar sales 1778–92; Stapleton-Cotton MSS, Bundle 18, W. Nisbet to Lady Stapleton, 23 May 1788.

⁴¹ Goveia, *Leeward Islands*, 121; Higman, *Slave Populations*, 118.

The estates had to become more self-sufficient, but local conditions precluded many of the adjustments that succeeded so well on Barbados and Antigua. The soils of St Kitts were unsuitable for the growing of corn in conjunction with cane; root crops such as yams did less damage to the yield of sugar, but on the higher slopes the plough could not be used as an aid to cultivation. So the best strategy was to concentrate a greater proportion of the sugar cane on the more easily worked lower fields, close to the mill, boiling house, and cattle pens. Meanwhile up in the mountains many cane pieces were given over permanently to food crops, often distributed as extra provision grounds among the slaves, or if sugar growing continued, it was undertaken without the brutal labour of basket dunging in the old style. Instead, as a preparation for planting, cattle were tethered on the fields, or crops of pigeon peas were grown to be dug in as a green manure, or dung was applied 'under the bank', that is, spread about from carts before cane holing began. On the lower slopes the practice of alternating cane with yams was revived.⁴²

These measures economized both labour and imported food. By the early 1830s deliveries of bread and wheat flour to the island had been cut to a tenth of their level in the 1770s (by itself this reduction amounted to a saving of some 20 per cent on plantation operating costs), while slave mortality fell to the point at which it was matched by births.⁴³ However, a price had to be paid. Over the same period, with less intensive manuring and a smaller proportion of land in canes, exports of sugar from St Kitts were reduced from an annual average of 16,000 hogsheads to less than 8,000, their contents no longer of a particularly high quality, while Antigua's shipments were more or less maintained, and those from Barbados grew nearly threefold. Nevertheless, the fabric of the plantation economy on St Kitts still survived: very few estates went into liquidation, profits were still being made during the 1820s, although at a very modest rate by

⁴² Romney MSS, A 139, account of land on Romney's plantation 1823-7; E 303, account of land on Jefferson's plantation, 24 Aug. 1811; Davy, *West Indies*, 447-57; Correspondence relative to the labouring population in the West Indies, *Parl. Papers* 1845, xxxi (642), 185.

⁴³ PRO, T. 1/489, 498, 507, Naval Office Shipping Lists for St Kitts 1772-4; Cust. 6/1, Ledger of Imports into Colonies 1832; Estridge MSS, D/EX 292 E1, plantation accounts 1816-24; Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), 243; Wilson, *Greene King*, 32-45.

the standards of earlier years, and the island could even attract some new investors. Local geography had prevented any major improvement in efficiency, so that deteriorating terms of trade cut deeply into the planters' revenues. Yet because the sugar estates here had been so lucrative, they could suffer considerably without being brought to the point of complete dissolution.⁴⁴

NEVIS AND MONTSERRAT

Nevis and Montserrat are also mountainous islands of volcanic origin, but smaller than St Kitts, with fewer natural advantages in sugar production. Their terrain is even more rugged and their cane pieces, while often very fertile, lay even more widely scattered about the hillsides. Neither colony enjoyed any special reputation for the quality of its sugar. Consequently the scope for innovation and cost savings was severely limited, and most of their estates had been pushed below the margin of viability by the 1820s, although the two islands reached this position by rather different routes.⁴⁵

Long-term economic decline began on Montserrat in the later eighteenth century. Its exports fell by nearly a half during the American War of Independence and were never completely restored to pre-war levels. The plantations survived for the time being by minimizing their costs of operation: once output had been curtailed slave numbers could be maintained quite easily, fed with the least possible cash outlay from provision grounds on the abandoned cane fields.⁴⁶ However, the decline of revenues ruled out major technical improvement or new investment.

Nevis suffered less severely during the American war and afterwards made a more vigorous recovery. While difficult to work, some of the island's sugar land was highly fertile, approaching the standards of St Kitts, yet on Nevis there had

⁴⁴ Senhouse MSS, Memoirs of Joseph Senhouse, vol. ii, fo. 219; Davy, *West Indies*, 455-7.

⁴⁵ Pares, *West-India Fortune*, 103-59, 293-319; Hall, *Five of the Leeward*, 29-31, 51-4; Ragatz, *Statistics*, 19-20; Slebech MSS, 9402, N. Phillips's Journal, 17 Nov. 1775; Senhouse MSS, Memoirs of Joseph Senhouse, vol. ii, 15 June 1778; Stapleton-Cotton MSS, Bundles 2-24, accounts and correspondence for the Nevis estate 1745-1834; Delvin MSS, accounts and correspondence of the Delvin estate, Montserrat, 1813-37.

⁴⁶ Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Montserrat, No. 5; PRO, Cust. 6/1, Ledger of Imports into Colonies 1832.

hitherto been a good deal of ratooning. So in the 1790s its proprietors could take advantage of favourable markets and the Otaheite cane by cutting a greater share of plants. Nevis was the only one of the Leeward Islands whose exports reached their maximum during the Napoleonic period. But the enlarged crops were forced out at a heavy cost—in extra slaves, food purchases, even imported fertilizers—and declining sugar prices soon made the intensified agriculture hopelessly uneconomic.⁴⁷ Local soils included so many volcanic rocks that ploughing and the combination of food crops with canes in the Antiguan manner were impracticable. Nevis planters could not afford to cease cultivating the upper slopes, as on St Kitts, because their island was more susceptible to drought: complete dependence upon the lowlands would make crop failure and financial disaster almost inevitable. Furthermore, even through the best years of the eighteenth century, rates of return in the colony had been comparatively modest, offering little protection against subsequent misfortunes. By the later 1820s many of its estates were beginning to disintegrate.

JAMAICA

In Barbados and the Leewards much of the impetus for agricultural change came from the evident need to expand local food production as imported supplies became increasingly costly and precarious. Jamaica's more scattered settlement and relative self-sufficiency gave some protection against external pressures, but the island suffered special troubles of its own. The original English sugar colonies of the eastern Caribbean were almost fully developed by the 1750s; Jamaica would not reach this point until the closure of the slave-trade from Africa, after experiencing the full penalties of economic maturity for the first time in the later eighteenth century.⁴⁸

⁴⁷ Pares, *West-India Fortune*, 107–13, 127; Bodrhyddan MSS, G. W. Daniell, Nevis, 25 July 1794.

⁴⁸ The main sources for this account of Jamaican agriculture are Long, *Jamaica*, i. 435–64; Edwards, *West Indies*, i. 239–58; T. Roughley, *The Jamaica Planter's Guide* (1823); Craton and Walvin, *Jamaican Plantation*, 96–108, 169–82; B. W. Higman, *Slave Population and Economy in Jamaica, 1807–1834* (Cambridge, 1976); R. K. Ormrod, 'The Evolution of Soil Management Practices in Early Jamaican Sugar Planting', *Journal of Historical Geo-*

During the pioneering phase Jamaican planters could boil off most of the sugar crop with firewood cut from their own estates at the slack time about Christmas. However, each harvest bit deeper into accessible reserves of timber, and much woodland was simply wasted with the improvidence of the frontier. In the dry season bush fires—started by lightning strikes, by runaways' encampments, or by slaves as they cleared new provision grounds—were left to burn unattended for weeks at a time: 'many of the Mountains on fire, you shall hear the Crash of great Trees falling very frequently'.⁴⁹ Property rights in standing timber counted for little: 'people in this Country do not Stick about lines if a piece of wood is wanted and can possibly be got at'.⁵⁰ So it became necessary to rely more and more upon cane-trash as fuel, requiring extra labour at crop time, and the construction of new or enlarged trash houses. On recently cleared land, assisted by adjacent woods, respectable yields were achieved with little or no manuring. A generous coating of trash remained to protect the fields after the canes were cut, and the numerous cattle and mules—kept primarily for haulage and to power the mills—could be left for much of the time to fend for themselves. With less material available for compost, however, the rate of soil erosion and exhaustion accelerated, particularly on the hillsides, where many of the cane pieces were located for ease of drainage.⁵¹

As these difficulties became obvious, proprietors responded with a wide variety of adjustments, many of them rather superficial and unsatisfactory. Worn-out fields could be left fallow, but if output were not to fall, it became necessary to make new plantings at an inconvenient distance from the works. Attempts were made to increase the cultivation of 'bottom lands', rich alluvial deposits which had hitherto been regarded as too laborious for profitable agriculture. They incubated plant

graphy, v (1979), 157–70; Clarendon, Dickenson, Dundee, Fitzherbert, Gale-Morant, Goulburn, Monson, Nisbet, Penrhyn, Slebech, Smyth, and Vassall MSS.

⁴⁹ Monson MSS, Thistlewood Diaries, 21 Apr. 1754.

⁵⁰ Clarendon MSS, Dep. c 358, Bundle 2, J. Blyth to J. F. Barham, 22 Apr. 1822.

⁵¹ Fitzherbert MSS, WI/9, J. Blaw to W. P. Perrin, 4 July 1773; W. Sutherland to W. P. Perrin, 20 June 1795; Penrhyn MSS, D. Ewart to Lord Penrhyn, 4 July 1807. On some of the longest-settled estates such problems were being noticed by the 1720s and 1730s: Ormrod, 'Soil Management Practices', 164; Smyth MSS, AC/WO/16, M. Elbridge to H. Woolnough, 22 Nov. 1739.

diseases and injured the slaves.⁵² New types of fuel offered a way of sparing the cane-trash. Bamboo was propagated from the East Indies, originally as a source of barrel hoops during the American War of Independence, but it grew poorly on the mountains where reafforestation would have been most helpful, and in any case proved an inferior alternative to native timber at the boiling house.⁵³ The use of imported coal, in imitation of practice on St Kitts, also seemed for a time to be a promising expedient, although it required investment in costly iron pans and was believed by some to impair the quality of the sugar. Between the 1770s and the turn of the century deliveries of coal to Jamaica rose fivefold. Then any further increase was prevented by the wartime inflation of ocean freight rates and overland haulage costs. (Unlike St Kitts, only a minority of Jamaican estates lay close to a shipping point.⁵⁴)

Metropolitan agriculture was another source of inspiration. The doctrine of careful tillage expounded in Jethro Tull's *Horse-hoing Husbandry* had a brief popularity, and provoked some inconclusive trials with 'thin planting', made in the hope that the circulation of air between more widely spaced rows of cane would improve their growth.⁵⁵ Also, from the 1760s nearly every estate adopted the plough, as a means of achieving a deeper cultivation and sparing the slaves from the task of cane holing in unbroken ground.⁵⁶ Yet the ploughman in Jamaica was often confronted by a hilly terrain, stiff or rocky soils, insufficient draught animals, and the need to keep drainage trenches open. Or, when these problems could be mastered, the land was over-worked, accelerating erosion and the decomposition of organic

⁵² Vassall MSS, W. Vassall to J. Wedderburn, 22 Nov. 1774, 3 Aug. 1779; Ormrod, 'Soil Management Practices', 160.

⁵³ Vassall MSS, Vassall to Wedderburn, 21 Dec. 1778, 2 Jan. 1788; Fitzherbert MSS, WI/9, Sutherland to Perrin, 20 Dec. 1795.

⁵⁴ Slebech MSS, 8796, report on Harbourhead estate 1778; PRO, Cust. 17, States of Navigation, Commerce, and Revenue 1772-1808; Cust. 8, Ledgers of Exports of British Merchandise 1812-32.

⁵⁵ Monson MSS, Thistlewood Diaries, 5 Sept. 1757, 19 Aug. 1758, 17 Sept. 1758; Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 10 May 1766, 8 May 1767.

⁵⁶ Long, *Jamaica*, i. 448; M. Craton, J. Walvin, and D. Wright (eds.), *Slavery, Abolition and Emancipation* (1976), 102; Craton, *Invisible Man*, 423 nn. 7-8; Stirling of Keir MSS, T-SK 21/3, inventory of Hampden estate 1770; Vassall MSS, W. Vassall to J. Wedderburn, 19 May 1772, 1 July 1777, 2 Aug. 1777, 3 Feb. 1779; Hall MSS, 1069/3, J. Kennion to T. Hall, 15 and 28 Mar. 1777; Gale-Morant MSS, 3/c, listings of slaves on York plantation 1778, 1782.

matter, and making the canes more liable to lodge. By the turn of the century many planters had given up ploughing in disgust, although favourable results were eventually achieved through better-fed livestock, greater care in employing adequate numbers of white men as instructors for the slaves at the early stages, and more durable implements, avoiding above all any that were made of cast iron.⁵⁷ With labour in short supply after the closure of the slave-trade, most plantations had begun to use the plough again by the early 1830s, but only on the most suitable land, and even then gang work was usually needed to form the cane holes. In the right circumstances ploughing might be helpful, but the improvements in efficiency that it offered were modest.⁵⁸

While the cost of preparing a given acreage for sugar cane could not be reduced very much, another strategy aimed to cut back the proportion of land replanted each year. This approach, which proved much better suited to Jamaican conditions, was pursued both through innovation at the level of the individual estate and through long-term changes in the distribution of sugar planting over the island. Early settlement had been heavily concentrated in the southern and interior parishes—especially St Thomas-in-the-East, Clarendon, St Thomas-in-the-Vale, St John, St Elizabeth, and Westmoreland—most of which offered fertile, well-watered soils, easy access to the port of Kingston, and relative safety (Figs. 4, 5, and 6).⁵⁹ For much of the first century of English colonization Jamaica's north side was left as a virtual wilderness, the refuge of runaway slaves and vulnerable

⁵⁷ W. Beckford, *A Descriptive Account of a Part of the Island of Jamaica* (2 vols., 1790), ii. 198–208; Edwards, *West Indies*, ii. 245–7; Clarendon MSS, Dep. b 36, listings of slaves on Mesopotamia and Island plantations 1780–1802; Dep. c 428, H. W. Plummer to J. F. Barham, 10 Dec. 1808; Vassall MSS, W. Vassall to J. Graham, 4 Mar. 1795; Fitzherbert MSS, WI/4, Messrs Jaques and Fisher to W. P. Perrin, 16 July 1791; WI/9, W. Sutherland to Perrin, 8 Feb. 1801.

⁵⁸ Green, *British Slave Emancipation*, 207–8; M. G. Lewis, *Journal of a West India Proprietor, kept during a Residence in the Island of Jamaica*, ed. M. Wilson (1929), 272; Report from the Select Committee . . . upon . . . the Extinction of Slavery . . ., *Parl. Papers* 1831–2, xx (721), QQ. 430–2; Clarendon MSS, Dep. c 358, Bundle 2, J. Blyth to J. F. Barham, 16 June 1817; Dep. c 360, Bundle 8, W. Ridgard to Barham, 9 Oct. 1828; Fitzherbert MSS, WI/20, P. Mahon to H. Fitzherbert, 21 July 1828; Goulburn MSS, III/3T, report on Amity Hall by H. M. Wood, 1831.

⁵⁹ In 1739 these 6 parishes accounted for 70% of Jamaica's sugar production: British Library, Add. MS 12431, fos. 152–7, 'Sugar Plantations in Jamaica with the Quantity of Sugars made generally for Some Years past on them, Christmas 1739'.

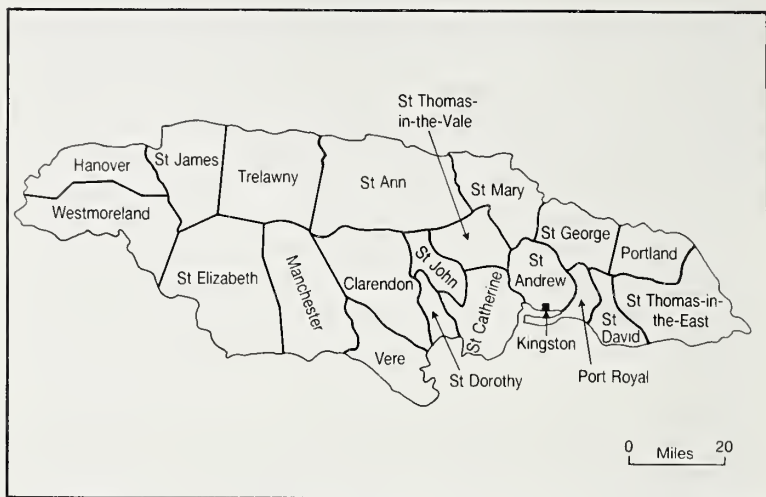


FIG. 4. Early Nineteenth-century Jamaica: Parishes

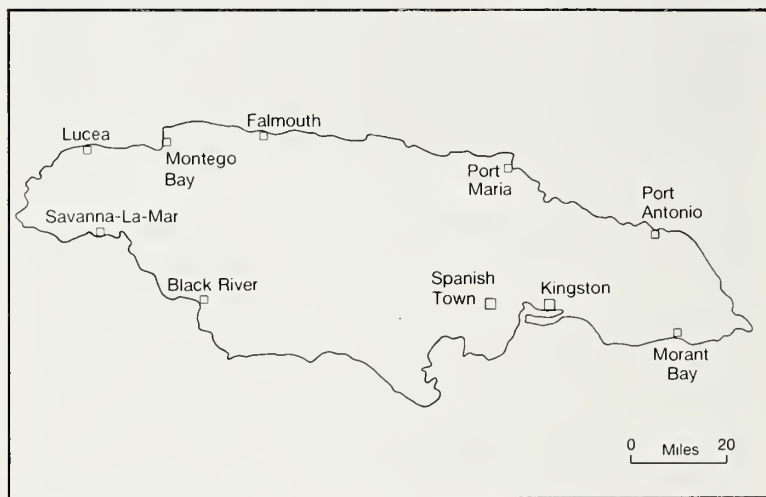


FIG. 5. Early Nineteenth-century Jamaica: Principal Towns

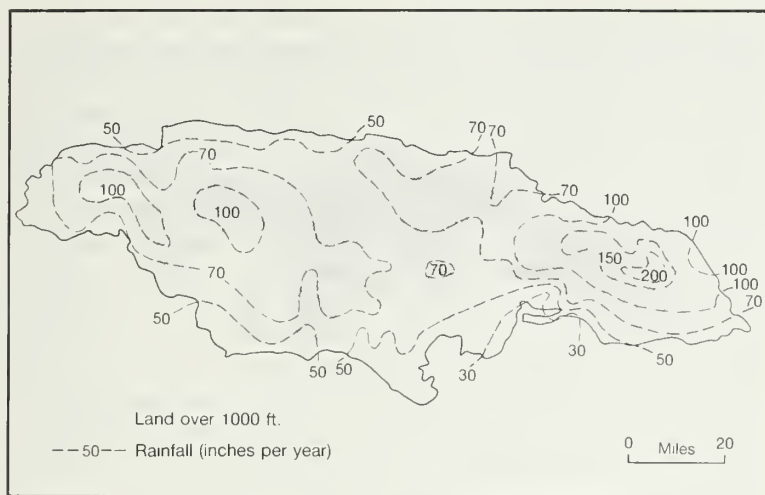


FIG. 6. Jamaica: Rainfall and Relief

Source: M. Craton, 'Jamaican Slave Mortality: Fresh Light from Worthy Park, Longville and the Tharp Estates', *Journal of Caribbean History*, iii (1971), 1.

to raiding parties mounted by the Spanish from Cuba. As time passed such dangers receded. The Maroon treaty of 1739 improved internal security; international warfare within the Caribbean became more gentlemanly; Montego Bay, Falmouth, and other outports reached a size at which they could attract regular shipping services. Over the thirty-five years up to the outbreak of the American War of Independence the number of Jamaican sugar estates doubled, and three-quarters of the new plantations were established in a belt stretching about ten miles inland from the sea through the northern parishes from Hanover to St Mary. On the south side the parish of Vere was the main centre of expansion.⁶⁰

It soon became clear that these new areas of settlement would not accommodate the casual methods which hitherto had been customary in Jamaican planting. Rainfall was less reliable than in the longer-established districts, making the systematic application of manure a necessary insurance against drought, even with freshly cleared fields. Yet when this precaution had been taken,

⁶⁰ Edwards, *West Indies*, i. 312-14.

ratoons could be cut as many as ten or fifteen times, something that was quite out of the question on the stiff soils of the interior, where standing water rotted the cane stools and made replanting necessary after three or four years. So Jamaican dry-weather agriculture, like that of the eastern Caribbean, depended upon the condition of its livestock. In Vere Guinea corn became the mainstay, used as in Barbados to feed both cattle and slaves.⁶¹ In the northern parishes the key innovation was Guinea grass (*Panicum maximum*), first introduced from Africa about 1740. Its seeds, so the story ran, had been imported as food for some birds belonging to the colony's chief justice, but the birds died and the remaining seeds were discarded, to throw up a luxuriant vegetation. Guinea grass, in suitable conditions, was estimated to be on average four times more productive than an equal area of natural pasture, growing several feet high and ideal either to graze or to cut as fodder for penned animals.⁶²

Although improved grassland made an essential contribution to the mid-century development of the north side, elsewhere it remained for some time a rather curious novelty, an appropriate business perhaps for small settlers, but requiring so much labour to establish and maintain that it could not be profitably included within the routine of an active sugar estate.⁶³ Nevertheless, from the time of the American War of Independence pastures and livestock began to preoccupy even the most conservative planters. The poverty of their animals was advertised by the failure of so many early experiments in ploughing. Closer official controls and the revival of commercial sugar production on Cuba restricted the contraband trade in cattle and mules from the Spanish colonies upon which many estates had come to depend. As settlement thickened within Jamaica, landholdings were more strictly defined, extinguishing customary rights of free range.⁶⁴

⁶¹ Higman, *Jamaica*, 122; Fitzherbert MSS, records of Vere (Perrins) plantation; Goulburn MSS, records of Amity Hall plantation.

⁶² Edwards, *West Indies*, i. 254; Tharp MSS, R.55.7.123.3, inventory of Bossue plantation 1784; Fitzherbert MSS, WI/9, W. Sutherland to W. P. Perrin, 23 Nov. 1800. Guinea grass does best with low to medium rainfall, in well-drained soil on a limestone base, conditions that prevail in much of western Jamaica. Barbados and Antigua are on the whole rather too dry for it, while much of eastern Jamaica and the Windward Islands are too wet.

⁶³ Monson MSS, Thistlewood Diaries, 10 May 1750.

⁶⁴ Fitzherbert MSS, WI/9, W. Sutherland to W. P. Perrin, 1 Jan. 1784.

It was also recognized that better pastures could facilitate a rapid sugar harvest (especially valuable in the Jamaican climate). When fodder was insufficient the planter often had to begin crop prematurely and continue it late, long after the onset of the spring rains, to allow for the feeble work rate of his malnourished animals and assure them a supply of cane tops.⁶⁵ Finally, the merits of Guinea grass were confirmed from the 1790s by the new cane varieties. The unusual resilience of the Ribband and Violet canes against drought gave further encouragement to planting on the coastal lowlands. In districts with more abundant rainfall the Otaheite or the Bourbon succeeded best, but both of these needed a rich soil, and the Bourbon had a relatively small volume of fibre in proportion to juice, so that feeding the cattle and boiling off the crop became even more difficult.⁶⁶ Abundant pastures were now quite essential to keep the land in good heart. It was the damage done by their over-enthusiastic adoption of the Otaheite cane that converted proprietors in St Thomas-in-the-East to the 'system of manuring which they have been obliged to adopt in other parts of the Island . . . not naturally perhaps so fertile'.⁶⁷

Edward Long, writing in the 1770s from knowledge of conditions in Clarendon parish, considered that a quarter acre of pasture was necessary to support an acre of canes.⁶⁸ By the early nineteenth century grassland commonly matched or exceeded the cultivated area on Jamaican sugar estates.⁶⁹ In addition most of the leading proprietors established one or two specialized stock pens as a complement to their plantations. Apart from

⁶⁵ Fitzherbert MSS, WI/9, Sutherland to Perrin, 20 June 1795; Slebech MSS, 11569, T. Barritt to N. Phillips, 14 Oct. 1796.

⁶⁶ Slebech MSS, 11598, Barritt to Phillips, 23 Sept. 1799; Nisbet MSS, 5476, J. Chisholme to J. Craggs, 1 Feb. 1801; Fitzherbert MSS, WI/9, Sutherland to Perrin, 15 Dec. 1803.

⁶⁷ Fitzherbert MSS, WI/4, Messrs Jaques and Fisher to Perrin, 4 Aug. 1804; WI/9, F. Graham to Perrin, 30 Oct. 1807; Roughley, *Jamaica Planter's Guide*, 287; Sturge and Harvey, *West Indies in 1837*, Appendix, p. ii. Contemporary nomenclature has been followed, although it need not correspond to later usage. The Ribband and Violet canes were probably species from Batavia: Deerr, *Cane Sugar*, 23-43.

⁶⁸ Long, *Jamaica*, i. 459, 461.

⁶⁹ B. W. Higman, 'The Spatial Economy of Jamaican Sugar Plantations: Cartographic Evidence from the Eighteenth and Nineteenth Centuries', *Journal of Historical Geography*, xiii (1987), 26. Craton and Walvin, *Jamaican Plantation*, 171; Gale-Morant MSS, 3/a/1, plan of York plantation 1796; Tharp MSS, R.55.7.123.3, inventory of Bossue estate 1784; R.55.7.123.13, account of Tharp estates c1800; Fitzherbert MSS, WI/9, 'Abstracted Report of the Condition of Mr Perrins Jamaica Estates, January 1810'.

raising cattle and mules for sale or for estate service, pens could be used to grow food, and their lighter work regime allowed invalid slaves a respite from the stresses of sugar production. Pastures and pens might be developed in a number of ways. Many plantations had large reserves of rough grazing or scrub-land that were suitable for improvement. Adjacent holdings occasionally came on to the market, especially during the crises of the 1780s and 1820s. The boldest approach, feasible only for men who owned several estates, was deliberately to sacrifice consignments over the short term by putting the least profitable cane pieces under grass, perhaps even converting the whole of a sugar plantation into a pen.⁷⁰

Better-fed livestock made possible heavier dunging. By the 1830s fifty tons of manure per acre of plant canes had become the standard, compared with only twenty or thirty tons in the 1770s.⁷¹ Heavier dunging, together with the new cane varieties, in turn meant better crops. During the later eighteenth century an acre of plant canes was reckoned to give from 1,250 to 2,500 lbs. of muscovado, with a decline of about 50 per cent for each subsequent crop of ratoons that was taken. By the early nineteenth century an output of 3,500 lbs. per acre of plants was common, with the ratoons improved in proportion.⁷²

In Jamaica, as in Barbados and Antigua, some of the benefits of more efficient cultivation were passed to the slaves through a reduction in the amount of cane-hole digging. The most successful ratooning districts—Vere, St Catherine, coastal St James, Trelawny, and St Ann—where plants often accounted for no more than 10 per cent of the cane cut, had less than a fifth of Jamaica's sugar estates in the middle of the eighteenth century, but nearly a half in the 1830s.⁷³

⁷⁰ Sheridan, *Sugar and Slavery*, 229; Craton, *Invisible Man*, 15; Clarendon MSS, Dep. c 357, W. Smalling to J. F. Barham, 28 Mar. 1775; Dickenson (Wiltshire) MSS, 282/2, E. Dickenson to C. Dickenson, 14 Oct. 1777; Dickenson MSS, DD/DN 468, W. Dickenson to C. Dickenson, 2 Sept. 1792; Penrhyn MSS, 1239, R. Pennant to W. Falconer, 19–20 Apr. 1781.

⁷¹ Papers in Explanation of the Measures . . . for giving Effect to the Act for the Abolition of Slavery: pt. V (1) Jamaica, *Parl. Papers* 1837–8, xlix (154.1), 42–82, labour scales; Long, *Jamaica*, i. 441.

⁷² Craton, Walvin, and Wright, *Slavery*, 105; Beckford, *Island of Jamaica*, ii. 207; Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 6 May 1764; Sturge and Harvey, *West Indies in 1837*, Appendix, p. lxxviii; see also below, Table 5 and Fig. 11.

⁷³ British Library, Add. MS 12431, fos. 152–7; D. Hall, *Free Jamaica 1838–1865: An Economic History* (New Haven, Conn., 1959), 82.

Everything is done by Manure and high Cultivation and it is now an axiom in Trelawney that if you plant 40 acres annually you must have 200 head of stock to do justice to the land, and to improve the Sugar Crops there they begin with adding Grass to enable them to carry the requisite quantity of Cattle to manure the Cane Pieces.⁷⁴

Other areas followed as best they could. Trelawny's technique of sustaining the ratoons by annual applications of manure was much admired, but could not be successfully imitated outside the drier lowlands.⁷⁵ Yet if each replanting was more carefully prepared its economic life might be considerably extended, even in eastern Jamaica (Table 5).

TABLE 5. *Plant Canes and Ratoons on Four Jamaican Estates, 1759-1834*

Cane area cut (%)					Acres of cane cut per slave	Output of sugar	
Plant canes	Ratoons			Per acre of canes cut (lbs.)		Per slave	
	First	Second	Third+				
<i>Blue Mountain (St Thomas-in-the-East)</i>							
1759	44	44	12	0	0.80	1,901	1,537
1801	35	48	17	0	0.58	2,088	1,206
1829	18	18	13	51	0.80	1,784	1,488
<i>Worthy Park (St Thomas-in-the-Vale)</i>							
1786	41	41	18	0	0.83	1,211	1,002
1814	12	13	14	61	0.84	2,209	1,857
1822	29	14	14	43	0.88	1,862	1,635
1834	27	16	13	44	1.05	1,693	1,778
<i>Phillipsfield and Pleasant Hill (St Thomas-in-the-East)</i>							
1790	24	24	14	38	0.94	1,504	1,420
1811	18	16	19	47	1.04	2,160	2,250

Sources: Blue Mountain: Fitzherbert MSS, W1/5, 10, 15-16, surveys and accounts; Worthy Park: Craton and Walvin, *Jamaican Plantation*, 171; Craton, *Invisible Man*, 174-5; Phillipsfield, Pleasant Hill: Slebech MSS, 8509, 8441, 8443, accounts of canes to be cut.

⁷⁴ Fitzherbert MSS, W1/14, J. Laing to H. Fitzherbert, 1827.

⁷⁵ Vassall MSS, W. Vassall to J. Wedderburn, 2 Feb. 1791; Vassall to J. Graham, 19 Mar. 1791; Penrhyn MSS, 1366, R. W. Fearon to Lord Penrhyn, 16 Mar. 1805.

These developments were however qualified by less favourable influences. Although there was less replanting and more ploughing, cane holes had to be made deeper to receive the greater quantities of manure, and the area of cultivated land per slave increased, entailing extra weeding and harvest labour. Better pasturage made it possible to eliminate or greatly ease the burden of the evening grass collection, but Guinea grass had to be periodically cleaned or renewed.⁷⁶ Some use was made of 'fly penning'—folding the cattle through the fields as a preliminary to planting—but this technique wasted so much manure that many estates continued to prefer basket dunging.⁷⁷ On the whole Jamaican sugar planting probably did not become any less arduous; certainly by the time of emancipation the colony was distinctive among the early settled sugar islands for its particularly exacting labour regime. Night work during crop persisted on Jamaica after largely falling out of use elsewhere, slave children were sent into the fields at a relatively early age, and on Jamaican estates the working day was longer than in the eastern Caribbean.⁷⁸

The main cause of these differences was that Jamaica's planters, to a greater extent than their counterparts on Barbados and the Leewards, sought to gain from innovation by producing more sugar per slave (Table 6).⁷⁹ They did so partly because on Jamaican estates there was little opportunity to maintain revenue by substituting local products for imported supplies. Basic foods had always been raised on the island, and as deforestation continued the need for North American lumber inevitably grew, requiring larger consignments to meet the extra cost. Jamaicans were also encouraged to maximize output by what seemed to be most favourable prospects in the 1790s, after the inflation of produce prices through the uprising in Saint-Domingue. They still had reserves of undeveloped land, and exaggerated hopes for the Otaheite cane's potential in districts subject to heavy rainfall encouraged settlement on remote interior hillsides, where previously not even the boldest speculator would have ventured. Among the other British colonies

⁷⁶ Stephen, *Slavery*, ii. 124–33.

⁷⁷ Ormrod, 'Soil Management Practices', 161–2.

⁷⁸ Higman, *Slave Populations*, 186–7; and see below, ch. 5 n. 94.

⁷⁹ Much of the increase in the weight of exports from Barbados occurred because of the shift from clayed to muscovado sugar.

TABLE 6. *Average Sugar Production per Estate Slave, 1739-1834 (lbs.)*

	Barbados	Leeward Islands	Jamaica	Ceded Islands	Trinidad, British Guiana
1739-48	392	1,019	987		
1749-55	414	1,019	1,000		
1756-62	448	1,165	1,054		
1763-75	437	997	1,154	n.d.	
1776-82	269	773	953	n.d.	
1783-91	329	580	1,157	1,164	
1792-8	430	799	1,317	843	
1799-1819	616	1,109	1,505	1,221	n.d.
1820-34	672	930	1,400	1,478	1,802

Sources: Ward, 'Profitability', 206; Higman, *Slave Populations*, 55-8, 417-18; sources cited for Fig. 2, above; below, ch. 6 n. 1.

there was room for expansion only in the Ceded Islands, but the French-inspired rebellions that struck Grenada and St Vincent discouraged investment here. So in Jamaica between 1791 and 1808 180,000 new slaves were landed for sale, adding to its stock by a third, nearly a hundred new plantations were established, and sugar exports doubled.⁸⁰ Masters who had begun to recognize during the 1770s and 1780s that working rates should be eased let this consideration go by the board with the return of prosperity.⁸¹

However, within a few years this reckless expansion brought some painful consequences. The extra output helped to depress sugar prices, and much of the newly cleared land proved quite unsuitable for canes. Then the closure of the African trade from 1808 made it absolutely necessary to achieve a self-sustaining

⁸⁰ R. A. McDonald, 'Measuring the British Slave Trade to Jamaica, 1789-1808: A Comment', *Economic History Review*, 2nd Ser. xxxiii (1980), 254; Hall, *Free Jamaica*, 82. For the effects of rebellion on Grenada and St Vincent see M. Craton, *Testing the Chains: Resistance to Slavery in the British West Indies* (Ithaca, NY, 1982), 180-210. Jamaican planters expressed fear of repercussions from Saint-Domingue: C. Taylor, 'Planter Comment on Slave Revolts in 18th-century Jamaica', *Slavery and Abolition*, iii (1982), 248-51. However, the Ceded Islands faced a more immediate threat from the revolutionary government on Guadeloupe.

⁸¹ e.g. compare the tone of correspondence in the Vassall MSS from the 1770s, 1780s, and 1790s.

slave population. Once again intelligent opinion stressed the need to save labour, even at the expense of the sugar crop. In 1823 Thomas Roughley offered a systematically argued programme of reform with his *Jamaica Planter's Guide*. The cane-fields should be compact, well manured, and intensively weeded, so that the slaves would be spared from too much holing, the use of hired gangs kept to a minimum, sufficient labour left free to maintain the pastures, and the harvest brought more easily to the mill. Roughley had sharp words for the attorneys who supervised Jamaica's absentee-owned estates. These men, he believed, were likely to serve themselves, the merchant, and the mortgagee, rather than the proprietor. Their usual payment by a 5 per cent commission on sales made them put pressure on estate overseers to force up output regardless of operating costs or profitability. A fixed salary should therefore replace the commission, with the attorney sailing out from England each year to collect accounts for his principals. In Jamaica for only three months at a time, he might escape infection from colonial values.⁸²

This scheme of commuting agents was completely fanciful, but fixed salaries did become more common,⁸³ and some planters attended to their grasslands with a new urgency. The early nineteenth-century depressions brought many smaller properties on to the market. For example, J. F. Barham took over the derelict Windsor sugar estate in 1813 and converted it to a pen supporting his Island plantation. Mesopotamia, his most valuable Jamaican property, was assisted by the purchase of Springfield, another failing upland sugar estate. The 110 Springfield slaves were established at Mesopotamia in order to extend the pastures and save on hired labour.⁸⁴ The new attorney given charge of Mesopotamia in 1824 reported the need for a modified policy: 'they have been in the habit of putting in very large plants here, much more than they are able to do justice to. I think it only distresses the negros

⁸² Roughley, *Jamaica Planter's Guide*, 3-28, 234-8.

⁸³ For the spread of fixed salaries see Brathwaite, *Development of Creole Society*, 139; Clarendon MSS, Dep. b 35, accounts of Mesopotamia plantation 1831. However, this change may to some extent have been forced by the attorneys themselves, as an insurance against the decline of produce prices.

⁸⁴ Clarendon MSS, Dep. c 428, J. F. Barham to J. C. Grant, 30 Jan. 1813; Dep. c 358, Bundle 2, Grant to Barham, 28 Jan. 1819; J. Blyth to Barham, 3 July 1820.

...'.⁸⁵ 'Many of the slaves flinch from digging cane holes. Half the gang would wish to be excused from that work. In future we must plant less and take more care of the ratoons. It has always been my plan.'⁸⁶ During the course of the decade several new Guinea grass pieces were established at Mesopotamia, and the acreage in plant canes, much of it alternated with pasture, declined by a quarter.

Sir Henry Fitzherbert authorized even more far-reaching changes, buying one pen and turning to grass the weakest of his three Jamaican plantations—the waterlogged Grange Hill in Portland parish—while at Blue Mountain, highly lucrative but a notorious graveyard for slaves, the area in canes was cut from 400 to 250 acres. As his attorney advised:

The reduction of the Cane Field at Blue Mountain and Keeping in Canes only on the best Land, may and probably will diminish the Crops. But it will no doubt also lessen Expences and keep Negroes and Stock in good Condition. The cane pieces that are abandoned would throw up Grass if planted thick and give the cattle an abundant Supply.⁸⁷

By the end of the 1820s the population decline at Blue Mountain had been brought to a halt, after running at 5 per cent a year earlier in the decade. Although output fell as expected, profits continued, 'an agreeable surprise'.⁸⁸

But there were other proprietors, for example the English politician Henry Goulburn, who took a different line. The settlement of a pen to combine with Amity Hall, his highly fertile estate in the parish of Vere, was first suggested towards the end of the Napoleonic war. Then it seemed more rewarding to take immediate advantage of high sugar prices by installing a steam engine, which promised a quicker crop and improved yields. This investment, and the purchase of additional slaves to maintain the labour force, absorbed all the absentee owner's spare funds. By the 1820s, although Amity Hall remained profitable, he felt unable to afford any major new enterprise. Half-hearted

⁸⁵ Clarendon MSS, Dep. c 358, Bundle 2, W. Ridgard to Barham, 5 Feb. 1824.

⁸⁶ Clarendon MSS, Dep. c 359, Bundle 4, Ridgard to Barham, 13 Sept. 1825.

⁸⁷ Fitzherbert MSS, W1/14, J. Laing to H. Fitzherbert, 1827.

⁸⁸ Fitzherbert MSS, W1/5, W1/14, accounts; W1/15, H. Fitzherbert to C. Lewsey, 5 June 1827. For other pens coming up for sale about this time see Craton and Walvin, *Jamaican Plantation*, 187; Airlie MSS, GD 16/27/291, valuation of Airlie plantation 1817.

attempts to raise fodder on marginal land nearby proved an unsatisfactory basis for trials with ploughing, and the pen appropriate for such an important estate was not acquired until after emancipation, when the sugar market had temporarily recovered.⁸⁹ At least Goulburn tolerated a severe decline in his Jamaican revenues, and Amity Hall's slaves eventually maintained their numbers.⁹⁰ Sir Rose Price, owner of Worthy Park in the interior parish of St Thomas-in-the-Vale, was more exacting. Immediately before emancipation his agents raised almost as much sugar as they had done twenty years before, with a third fewer effective workers. This increased productivity was achieved mainly through raising the share of plant canes, and Worthy Park's slaves suffered severe and accelerating natural decrease, including a particularly marked decline in fertility, as extra burdens fell on the field gangs. Similar demographic patterns appeared on neighbouring sugar estates, although elsewhere in the island trends were more favourable.⁹¹

It is difficult to summarize the development of Jamaican sugar planting through the last generations of slavery. Taking the colony as a whole, over the long term, efficiency rose substantially. Between the middle of the eighteenth century and the early 1830s the volume of production for each slave belonging to the estates grew by 35 per cent, despite the depletion of natural resources, and a declining proportion of able-bodied workers. Furthermore, this result was achieved without any general increase in hard driving. Even during the early nineteenth century many slaves gained more time to work their provision grounds and demographic indicators improved, although more slowly than in the other islands.⁹² On the other hand, over the period immediately before emancipation Jamaica's plantation economy suffered a damaging crisis. After reaching a maximum about 1805, sugar exports fell by 40 per cent over the next three decades, a rate of decline unmatched anywhere else in the British West Indies, while slave numbers fell by a tenth and a

⁸⁹ Goulburn MSS, III/3H, 3T, 4Q, correspondence of H. Goulburn with his Jamaican attorneys 1812-38.

⁹⁰ Between 1805 and 1819 Amity Hall's annual sugar crop averaged 340 hogsheads, yielding a net profit of £5,800. In the period 1820-33 the crop averaged 200 hogsheads and the profit £1,850: Goulburn MSS, III/50, accounts.

⁹¹ Craton, *Invisible Man*, 90-117, 174-5; see also Table 5, and ch. 6 n. 103.

⁹² See below, ch. 5.

quarter of the estates ceased production. The loss of slaves hindered the relaxation of work schedules, which in turn postponed the onset of natural increase and a solution to the labour problem.⁹³

Most of Jamaica's special difficulties can be traced to the expansion during the 1790s. Enlarging the final generation of imported Africans, subject to high mortality, aggravated the subsequent population decline. To finance the sudden growth of productive capacity many planters incurred heavy debts, which had to be amortized in a period of deflation. It was partly for this reason that so much of the newly opened land—naturally inferior in any case—was cropped to exhaustion within a few years. Only energetic, well-established owners, operating on a large scale, and reinforced by investments outside the island, might hope to adjust successfully. They could afford to purchase additional properties, where these were necessary, and accommodate the long periods of impaired performance, caused by disease and running away, that followed when slaves were moved from one district to another.⁹⁴ Men with more limited resources, perhaps dependent upon a single estate, were unlikely to survive the loss of current income that any contraction of the cane land would entail. Also many properties were physically unsuited for Guinea grass and long ratooning, especially in the eastern parishes, where a third of the plantations ceased to make sugar. Areas of modest prosperity remained. In Vere no plantation was given up, and on the north side, from Hanover to St Mary, the rate of attrition averaged about 15 per cent.⁹⁵ But this did not console the individual who was ruined. For attorneys and overseers no other crop matched the prestige or the material rewards of sugar. Even slaves were reported as wishing to continue with it when the conversion of their estate into a pen had been proposed.⁹⁶ The speed and scale of Jamaica's economic rationalization fostered a general malaise and sense of social decay.

⁹³ Higman, *Jamaica*, 187–226. The series printed by Ragatz, *Statistics*, p. 23, gives 1805 as the year in which Jamaican exports reached their maximum. According to PRO, Cust. 17, State of Navigation, Commerce, and Revenue, used as a source for Fig. 2 above, Great Britain's sugar imports from Jamaica peaked in 1802.

⁹⁴ For the difficulties in moving labour between estates see the behaviour of the Springfield slaves sent to Mesopotamia: Clarendon MSS, Dep. c 358, Bundle 2, J. Blyth to J. F. Barham, 12 Apr. 1820; W. Ridgard to Barham, 13 Feb., 8 June 1825.

⁹⁵ Hall, *Free Jamaica*, 82; Higman, *Jamaica*, 20, 224–5.

⁹⁶ Fitzherbert MSS, W1/14, J. Laing to H. Fitzherbert, 26 May 1826.

THE NEW COLONIES

Most agricultural innovation on Barbados, the Leewards, and Jamaica was intended to deal in one way or another with problems of soil deterioration. On the new colonies, where the estate economy never pressed natural resources so closely to their limit, this impulse for reform remained much weaker. Although planters here came to be influenced by the need for amelioration, it was pursued without any comprehensive changes in agricultural technique.⁹⁷

From their earliest period of development by the British, sugar estates on the Ceded Islands seem to have been most rewarding, with yields per slave at least 50 per cent higher than in the old colonies.⁹⁸ Yet these results were achieved under a labour regime which by contemporary standards was not especially severe. Except on Dominica, most of the newly cleared land proved very fertile, and although by the 1780s frequent replanting had become necessary—few ratoons continued beyond a third crop—the canes were only lightly manured. Thus estates could operate with modest livestock holdings, only half the size, relative to cane acreage, of those maintained in Jamaica. Also most Ceded Island estates had the benefit of water power. Their mills and boiling houses were constructed on a generous scale, to the latest and most improved designs. (During the 1760s and early 1770s metropolitan finance was readily available for West Indian investment.)

The main difficulties encountered by Ceded Island proprietors in the last decades of the eighteenth century were more political than economic. Because the colonies had been acquired at France's expense through the severe peace settlement of 1763, they seemed vulnerable to any reversion in the European balance

⁹⁷ The main collections of estate records from the new colonies used here include the Balfour-Melville, Cochrane, Cooper-Franks, Ellice, Gladstone, Home of Wedderburn, Moccas, and Young MSS; PRO, C. 104/178-80 (Chancery Masters' Exhibits), accounts and correspondence of Friendship, Golden Lane, Greenhill, and Les Coteaux plantations, Tobago 1803-30; PRO, C. 110/103-7 (Chancery Masters' Exhibits), accounts of Bocage, Boulogne, Pearl, Plaisance, and Madey's plantations, Grenada 1796-1823. See also Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), evidence from Grenada, St Vincent, Trinidad, and British Guiana.

⁹⁸ Ward, 'Profitability', 208.

of power. Furthermore, Great Britain's longer-established sugar interests resented the new rivals. Tobago in fact went under French rule between 1782 and 1793, as part of the price paid by the British for defeat in the American War of Independence. Through the 1790s strategic insecurity was aggravated by revolutionary principles from France and their effects in encouraging slave rebellions on Dominica, St Vincent, and Grenada. Reconstruction following these uprisings could not be completed until the turn of the century. Grenada in particular was plagued by rats, which multiplied to a remarkable degree when estates were temporarily abandoned during the crisis of 1795-6.⁹⁹ A few years after order had been restored, the closure of the British slave-trade prevented any further expansion in productive capacity. Yet although immediately painful, these events served the Ceded Island planters' best interests over the long term, by restraining them from opening up inferior land.

However, even within a relatively favourable context, some adjustments were needed to conserve the work-force. Stiff soils and hilly terrain precluded any widespread introduction of the plough as a means to ease labour requirements. So the most important step taken in this direction was the use made of the new cane varieties to reduce replanting without any sacrifice of consignments, rather than to pursue the Jamaican policy of raising productivity. For example, in the late 1780s the owner of Waltham estate, Grenada, reckoned that at least a quarter (about forty-five acres) of his cane land ought to be planted and manured each year. A generation later, with nearly the same number of slaves, the average planting at Waltham had fallen to thirty acres, of which only the twenty acres nearest to the works and stock pens were basket-dunged. On outlying cane pieces fertility was maintained by periodic fallows, pursuing a pattern rather similar to that adopted on St Kitts.¹⁰⁰ The substitution of Bourbon canes allowed yields to be maintained or even slightly

⁹⁹ For the rebellions of the 1790s in the Ceded Islands, see Craton, *Testing the Chains*, 180-210, 224-7. For the rat problem see Moccas MSS, Bundle 8b, R. Farquhar to Sir G. Cornwall, 3 Apr. 1797; Home of Wedderburn MSS, GD 267 17/9, A. McSween to G. Home, 26 Mar. 1800.

¹⁰⁰ Home of Wedderburn MSS, GD 267 7/1, N. Home to Dr Bell, 29 Mar. 1789; Mr Townsend to N.H., 12 Feb. 1792; N.H. to T., 6 Apr. 1792; 17/9, A. McSween to G. Home, 20 Aug. 1799; 5/24, J. Fairbairn to G.H., 5 Nov. 1812, 16 Nov. 1814; 5/7, J.F. to G.H., 2 Jan. 1816; 5/40, J.F. to G.H., 6 Jan. 1820.

increased, despite less intensive cultivation. On the Ceded Islands little attention was paid to Guinea grass or break crops but, because the estates were not pushed too hard, they did not suffer so badly from soil depletion as those Jamaican properties which adopted the new cane varieties without improving fodder supplies. Even though the Ceded Islands' slave population declined by a quarter over the two decades following the closure of the African trade,¹⁰¹ the volume of their sugar exports held steady until the early 1830s, when it suffered as a result of hurricane damage (Fig. 2). Most plantations remained viable, despite the post-war depression.

In Trinidad and British Guiana sugar production enjoyed even more favourable conditions. The estates were laid out on rich coastal plains. (In the Ceded Islands, with their irregular terrain, naturally fertile land was often impaired by hill washes and erosion.) Most planters neglected manuring entirely, had their cane holes dug only a few inches deep, and yet were able to ratoon profitably for ten years or more. Therefore, despite very little replanting,¹⁰² the yearly output of sugar per slave ran at about 1,800 lbs., well above the average of the old colonies (Table 6). In British Guiana, where the seasonal variation in rainfall was slight, the sugar harvest could continue throughout the year. These territories' late development allowed to some extent a remedy for their main disadvantage, in motive power for milling. (The wind here was unreliable; rivers and streams ran slowly.) By the early nineteenth century steam engines had become cheap and efficient enough to be installed economically on quite small properties.¹⁰³

¹⁰¹ Higman, *Slave Populations*, 417-18.

¹⁰² e.g. at Vreedenhoop, Demerara, in the early 1830s plant canes accounted for 5-10% of the total cane acreage. No more than a tenth of an acre was planted annually per slave: Gladstone MSS, estate inventories. For a comparison with planting rates in Jamaica see Table 5.

¹⁰³ Thus Good Hope, Trinidad, producing less than 100 hogsheads a year, was equipped with a steam engine about 1807. However, 250 hogsheads per annum was reckoned to be the economic minimum for a steam-engine estate: Cochrane MSS, R. Bogle to Sir A. Cochrane, 14 Aug. 1824, 8 Feb. 1825. By about 1830 a quarter of Trinidad and British Guiana's sugar estates had steam engines: Deerr, *History of Sugar*, ii. 553-4.

PROCESSING

As many West Indian enthusiasts for ploughing discovered to their cost, the implements of European agriculture were of only limited value in the cultivation of sugar cane. Processing, however, benefited much more readily from new types of imported equipment, the products of Great Britain's Industrial Revolution.

In the middle of the eighteenth century grinding mills were driven either by animals (usually mules), water, or wind, with the first of these sources of power the most widely used. A mule mill entailed the lowest initial outlay—an important advantage during the early years of colonization—but was expensive to maintain over the longer term. Continuous working through the crop required at least four teams of livestock, each with eight animals, their total cost often exceeding that of the mill itself. Mules lived for only a few years, and their management occupied several slaves. In Jamaica the substitution of a water-wheel was reckoned to increase the value of an average-sized sugar estate by £7,000.¹⁰⁴ However, apart from Barbados and Antigua, where the trade winds blew almost continuously, it was unsafe to depend upon a windmill, and only the planters of the Jamaican interior had ready access to running water. As time passed and wealth accumulated, nature was improved by the construction of increasingly elaborate aqueducts, yet there were many estates—in Nevis, St Kitts, Montserrat, and the low-lying districts of Jamaica—for which they could never be feasible. At the end of the eighteenth century perhaps a third of the British West Indian sugar crop still passed through mule mills.¹⁰⁵

Within these constraints of physical geography improved machinery offered the best way to raise efficiency at the works. Originally all the mills, whatever their source of power, were cumbersome, unreliable devices, constructed mainly of wood, with three rollers mounted vertically to simplify the gearing and facilitate the outflow of juice. Slaves passed and repassed handfuls of cane through the rollers, a heavy and dangerous task. Then from the 1750s British engineers—Smeaton, Woolery,

¹⁰⁴ Monson MSS, Thistlewood Diaries, 21 Dec. 1766.

¹⁰⁵ Ragatz, *Statistics*, 5; Slebech MSS, 9402, Nathaniel Phillips's Journal, 15–20 Nov. 1775.

Garnett, Collinge, Fawcett, and Rennie were the best known—developed more efficient and robust designs, including greater amounts of cast iron. The arrival of the Otaheite cane, denser than the traditional creole varieties, made the extra durability in construction especially valuable.¹⁰⁶ To save labour, and reduce the risk of accidents, mechanical attachments were devised that automatically returned the canes for further grinding. The machinery was so strengthened that it could be braced up tightly enough to extract a reasonable proportion of juice in one or two passes. The placing of the rollers horizontally in a triangular configuration also gained favour. Horizontal mills were more easily fed and required only a single pass.¹⁰⁷ Raised walkways for the animals that gave motive power allowed the freer movement of cane and bagasse.¹⁰⁸

Taken together, the effects from these various modifications were impressive. At Egypt plantation in the 1760s Thomas Thistlewood ground out fifty gallons of juice per hour, using mules in a mill that had apparently been built some twenty or thirty years before. His neighbours' new plant achieved 250 or 300 gallons per hour, with only a few more slaves in attendance. By the 1830s as much as 400 gallons per hour was reported, even for mills driven by steers, cheaper but less effective and manageable than mules.¹⁰⁹

Compared with the progress in millwork, the more con-

¹⁰⁶ Deerr, *History of Sugar*, ii. 537–41; W. Barrett, 'Caribbean Sugar Production Standards in the Seventeenth and Eighteenth Centuries', in J. Parker (ed.), *Merchants and Scholars: Essays in the History of Exploration and Trade* (Minneapolis, 1965), 155; Pares, *West-India Fortune*, 116.

¹⁰⁷ For mechanical 'trash turners' see Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 10 May 1766; Senhouse MSS, *Memoirs of Joseph Senhouse*, vol. iii, fos. 17–20 (28 Feb. 1779), 60–1. Although experiments with horizontal rollers for sugar mills began during the 1750s and 1760s, John Collinge of London is credited with the first successful design in 1794: Deerr, *History of Sugar*, ii. 537; Clarendon MSS, Dep. c 357, Barnjum to Barham, 8 May 1767. By 1818 horizontal mills were said to account for half of the British West Indies' installed capacity. Some planters continued to prefer vertical mills because they wasted less juice: Moccas MSS, C. Cornewall to G. Cornewall, 6 Jan. 1818; A. Houston to G. Cornewall, 8 Mar., 11 June 1818. Cane had to be passed five or six times through the unimproved mills of early 19th-century Brazil, while by this time two passes at most were needed in the British colonies: Koster, *Travels in Brazil*, 348.

¹⁰⁸ D. Buisseret, *Historic Architecture of the Caribbean* (1980), 29–30.

¹⁰⁹ Monson MSS, Thistlewood Diaries, 9 May 1769, 13 Jan. 1774; *Parl. Papers* 1837–8, xlix (154.I), 43–9. By custom any device powered by animals was called a cattle mill. In the mid-18th century mules were mainly employed; later the use of steers became more common: Vassall MSS, W. Vassall to J. Wedderburn, 23 Jan. 1775; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834.

spicuous and widely discussed innovation of steam power as the prime mover remained quite unimportant in the old colonies. A typical early nineteenth-century mill driven by a steam engine could deliver 500 gallons of juice per hour, it cost little more to install than a large cattle mill, and saved the labour needed to manage relays of animals, a useful point as slave numbers fell.¹¹⁰ About a tenth of Jamaica's sugar estates were equipped with steam engines in the three decades before emancipation, enough to support a local population of competent mechanics and a foundry that could repair iron parts.¹¹¹ The diffusion of steam power, together with Guinea grass and the new canes, accounted for the relative strength of sugar production on the Jamaican coastal plains, where in the past planters had usually depended on cattle- and windmills, but it could do little to mitigate the crisis of the interior districts. Most estates here had water-wheels, and at this time water power, where accessible, was still more economic than steam. Also the transport of coal any distance inland was very expensive. In Barbados and the Leewards few estates were productive enough to justify the purchase of a steam engine as a replacement for existing machinery, and even in the most favoured parts of Jamaica the decline of profitability discouraged re-equipment. After 1820 most steam engines and millwork shipped to the West Indies were for installation on the new sugar estates of Trinidad and British Guiana.¹¹²

After milling, the cane juice was concentrated by evaporation in sets of open cauldrons, separating out impurities through constant skimming by the slaves who stood at the vessels, and through the addition of temper lime. Speed, economy in fuel and labour, and quality of final output were the main desiderata, with success depending partly upon routine discipline in the fields

¹¹⁰ For the relative costs of cattle and steam mills see Edwards, *West Indies*, ii. 292; Slebech MSS, 9118, 'Mr Boulton's price of one of his new invented Fire Engines . . . with some Computations thereon . . .', 4 Feb. 1786; Home of Wedderburn MSS, GD 267 5/24, J. Fairbairn to G. Home, 12 Nov. 1817, 24 Apr. 1818; Gladstone MSS, CH 55, inventory of Vreedenhoop estate 1825.

¹¹¹ Goulburn MSS, III/3H, T. Samson to H. Goulburn, 10 Feb. 1814; Penrhyn MSS, 1534, J. Shand to G. H. D. Pennant, 11 Mar. 1815; Fitzherbert MSS, WI/14, J. Laing to H. Fitzherbert, 12 May 1826; Deerr, *History of Sugar*, ii. 549-54.

¹¹² Higman, *Jamaica*, 214; C. R. Williams, *A Tour through the Island of Jamaica* (1827), 197-9; above, Table 4; Countries to which Machinery has been exported . . . from 1823 to 1827, *Parl. Papers* 1826-7, xviii (496).

and mill house: the canes should be ripe and wholesome when cut, and ground promptly at an even rate of delivery. Once boiling had begun, however, an element of mystery appeared. The chemistry of sugar manufacture remained beyond the planters' understanding, although they tried to improve their methods by experiment and close observation. Hydrometer readings were taken of the juice, and microscopes sent for to study the effects of different procedures on crystallization.¹¹³ Expert sugar bakers arrived with advice from Europe.¹¹⁴ During the 1790s Dr Higgins, 'a Gentleman of great eminence in the chemical line in London', was paid by the Jamaican House of Assembly to investigate the methods of boiling practised on the island.¹¹⁵ Nevertheless, on such details as the best way to add the temper lime, or the correct moment to convert the hot liquor to muscovado, planters recognized the empirical skills of their slaves in a way that would have been unthinkable with other tasks. Certain longer-settled estates—for example those of Barbados, Antigua, and the Jamaican parish of Westmoreland—were believed to be more skilful in manufacturing than the average and they attracted a good many admiring visitors. But these properties built up their reputation mainly through the accumulated experience of the labour force, although Barbados had the advantage of some unusually conscientious resident owners.¹¹⁶

The planters' useful contribution was for the most part limited to the refinement of fixed capital. Boiling houses became larger and better ventilated, built of stone and slate rather than timber, reducing the risk of fire. 'Shell teaches' beaten out from a single sheet of copper replaced vessels with angular, riveted bases, making it easier to ladle the juice and saving losses through leakage.¹¹⁷ Adjustments to the hanging of the coppers through

¹¹³ Monson MSS, Thistlewood Diaries, 28 June 1765; Home of Wedderburn MSS, GD 267 5/35. G. Home to J. Fairbairn, 30 Sept., 12 Dec. 1808.

¹¹⁴ Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 22 Apr. 1765; Monson MSS, Thistlewood Diaries, 14 Jan. 1776.

¹¹⁵ Fitzherbert MSS, W1/9, W. Sutherland to W. P. Perrin, 20 Feb. 1798.

¹¹⁶ British Library, Add. MS 12412, memorandum of E. Long 1778; Gladstone MSS, CH 242, R. Gladstone to J. Gladstone, 10 Apr. 1829. A Jamaican proprietor decided against having his sugar clayed in the Barbados manner, until a sufficient number of his recently imported Africans had been seasoned, 'and they are compleat masters in manufacturing muscovado sugar': Vassall MSS, W. Vassall to J. Wedderburn, 14 Dec. 1772.

¹¹⁷ F. G. Cassidy, *Jamaica Talk: Three Hundred Years of the English Language in Jamaica* (2nd edn., 1971), 91-2.

the evolution of the so-called Jamaican train brought some economies in fuel. Most valuable of all was the development from the 1770s of special receivers in which a preliminary purging could be achieved. Output from the mill flowed into these 'clarifiers' or 'cock coppers', where it was heated almost to boiling-point and treated with lime. Then, after most of the impurities had been separated out, the juice drained off through a siphon or side tap into the first cauldron, with the least possible disturbance of the residue. This preparation greatly accelerated the subsequent manufacture.¹¹⁸

Until about 1810 all these innovations were pursued most vigorously by Jamaican planters, the leading investors in new capacity, yet their slaves got little immediate advantage. Between the middle of the eighteenth century and emancipation the complement required to operate a sugar works was held constant at about twenty or twenty-five—mill bosun, mule boys, feeders, trash carriers, stokers, boilers, and distillers. In Jamaica over the same period the average yearly output per estate more than doubled, although the severity of manufacturing labour did not increase in proportion.¹¹⁹ Mill feeders could handle a greater volume of cane with no extra effort when the number of passes was reduced. The Jamaican train required fewer stoke holes. Boilers were made to manage larger cauldrons and dispatch their contents more rapidly, but juice that had been treated in a clarifier required less skimming during evaporation.¹²⁰ In processing, as in field agriculture, it is doubtful whether the Jamaican labour regime intensified as time passed, but it was certainly more arduous here than in the smaller islands.

By the 1770s Barbados and Antigua had largely dispensed with night working at crop time. Both islands could rely upon their windmills, Antigua benefited from an extended harvest season, and the decline of agriculture on Barbados had left its

¹¹⁸ Senhouse MSS, *Memoirs of Joseph Senhouse*, vol. iii, fos. 62-3 (1779); Vassall MSS, W. Vassall to J. Graham, 4 Jan. 1790.

¹¹⁹ Monson MSS, 31/38, *Diary of John Thistlewood*, 23 Jan. 1765; listings of slaves detailed in Appendix; *Parl. Papers* 1837-8, xlix (154.1), 43-9; and see below, ch. 6 n. 9.

¹²⁰ The capacity of the first copper rose from 150-200 to 270-500 gallons. The time taken for boiling juice into sugar fell from as much as six hours to between three and four hours: Monson MSS, *Thistlewood Diaries*, 19 Mar. 1757, 23 Apr. 1774; Edwards, *West Indies*, ii. 293; Roughley, *Jamaica Planter's Guide*, 194; Sturge and Harvey, *West Indies in 1837*, 255, Appendix, p. lv; Report from the Select Committee on Sugar and Coffee Planting, *Parl. Papers* 1847-8, xxiii, pt. I (395), Q. 4636.

estates with works that were unusually large relative to output.¹²¹ The subsequent revival of Barbadian cane yields was matched by greater efficiency in manufacturing, so that in the 1820s the colony's planters still expected to close up their boiling houses each evening. On St Kitts, Nevis, and Montserrat reduced production allowed some easing of night work. On the Ceded Islands it abated a little, even when output was maintained. Perhaps the enhanced efficiency of an increasingly creole labour force made this possible. Certainly the trend was encouraged by developments on Barbados. Contemporaries attributed the high quality of its sugar and the natural increase of its slaves to the lack of night work. In British Guiana a single daytime shift proved sufficient: cane cutting continued throughout the year, and many estates had powerful steam engines with double sets of coppers. In this Crown Colony, as in Trinidad, night working was also curtailed by official regulation.¹²²

In Jamaica, however, the practice continued almost unchanged, even though it was recognized to impair the quality of output and give opportunities for theft by both the slaves and the white supervisors.¹²³ Those estates which increased their slave holdings could slightly ease the burden of keeping the mill in operation by sharing it among three or four teams. (The smallest properties were restricted to only two alternate shifts, each one working as much as thirty hours at a time without sleep in the 'long spell'.) In the northern parishes, where seasonal variations in climate were less marked, some planters extended the sugar harvest over a longer period in order to limit the daily task. Elsewhere slaves were spared night work by those few masters who could afford either to sacrifice consignments or to increase the capacity of their works. But over the colony at large improvements in processing did little more than keep pace with the greater volume of cane to be handled.¹²⁴

¹²¹ Slebech MSS, 9402, N. Phillips's Journal, 20 Nov. 1775.

¹²² Higman, *Slave Populations*, 183; Home of Wedderburn MSS, GD 267 5/24, J. Fairbairn to G. Home, 26 June 1815; 5/1, T. Hankey to G. Home, 11 Jan. 1819; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834. For the increasing efficiency of harvest field labourers see below, 195-8.

¹²³ For examples of theft by a bookkeeper on the night shift see Monson MSS, 31/38, Diary of John Thistlewood, 25, 26, 30 Jan., 7 Feb. 1765. For the slaves' activities see Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834. At Blue Mountain 'the very drivers' set themselves against the abolition of night work: Fitzherbert MSS, WI/14, J. Laing to H. Fitzherbert, 10 June 1827.

[See opposite page for n. 124]

FEEDING

For most of this chapter we have considered modifications of plantation technique mainly as they affected efficiency in the production of sugar. Little attention has been given to the results for the slave population, except through changes in labour requirements. Nevertheless the slaves' condition was determined not just by the work that they were called upon to perform but also by their diet. At the middle of the eighteenth century the symptoms of chronic malnourishment showed through almost every detail of estate life: in patterns of demography, in the organization of the labour force, and in the measures that planters thought necessary to maintain discipline. So how did feeding standards evolve, as political complications interrupted external sources of supply and as estate revenues became more precarious?*

Distributions of fish were generally increased, although with significant differences between particular colonies and estates. Over the later eighteenth and early nineteenth centuries per caput imports grew on average by about a half in Barbados and Nevis, threefold in Antigua, and fourfold in Jamaica. However, they stood unchanged in St Kitts (Table 7).¹²⁵ The smaller islands continued to receive most of their supplies from North America, mainly in the form of dried cod. Herrings from Scotland came to account for the largest share of fish deliveries to Jamaica, as a result of the many Scottish planters established in the colony, and its comparatively slight involvement in North American trade.

Standards of allowance were strongly influenced by the rate of

* See endnote 3.

¹²⁴ Higman, *Slave Populations*, 182-3; *Parl. Papers* 1831-2, xx (721), QQ. 182, 499, 503; Fitzherbert MSS, W1/9, W. Sutherland to W. P. Perrin, 14 Aug. 1800; W1/14, J. Laing to H. Fitzherbert, 10 June 1827; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834; Goulburn MSS, III/3T, A. Bayley to H. Goulburn, 19 Mar. 1831.

¹²⁵ Official import returns have been used with statistics of colonial population, slave and free, to calculate per caput consumption. For deliveries to individual estates only the number of slaves has been considered. Some of the imported fish was eaten by the poorer white colonists, estate bookkeepers for example, but they took a much greater proportion of the salted beef and pork. Estimates of consumption based upon aggregate colonial data usually correspond closely to reported slave rations for individual estates. For assumptions about container sizes see below, endnote 3.

TABLE 7. *Imports of Fish per Slave, 1728-1834 (lbs.)*^a

Estate or colony		Fish imports (lbs.)	Source
<i>Barbados</i>			
Barbados	1750s	26	Fitzherbert MSS, W1/17, account of imports
Newton	1771	23	Newton MSS, 523/34, accounts
Barbados	1773	35	PRO T. 64/48-9, Naval Office Shipping Lists
Turners Hall	1771-5	47	Fitzherbert MSS, W1/17, accounts
Turners Hall	1776-93	23	Fitzherbert MSS, W1/17, accounts
Codrington	1784-1806	18	Codrington (Barbados) MSS, X/43, accounts
Barbados	1807-8	42	Ragatz, <i>Statistics</i> , 6
Codrington	1818-29	34	Codrington (Barbados) MSS, Box 8, accounts
Turners Hall	1820-34	45	Fitzherbert MSS, W1/17, accounts
Barbados	1832-4	57	<i>Parl. Papers</i> 1835, xlvii (693) etc.
<i>Leeward Islands</i>			
Stapleton, Nevis	1730	31	Gay, 'Letters from ... Nevis', 165
Antigua	1733	25	Cal. State Papers (Colonial), xli (1734-5), 208
Antigua	1772-4	15	PRO T. 1/493, 498, 502, 507, 509 Naval Office Shipping Lists
Nevis	1772-4	36	
St Kitts	1772-4	73	
Romney, St Kitts	1794-1801	64	Romney MSS, A 139, 162-71, accounts

Parham, Antigua	1816-24	47	Tudway MSS, Box 56, factors' report
Romney, St Kitts	1821-32	64	Romney MSS, A 139, 162-71, accounts
Antigua	1832-4	67	<i>Parl. Papers</i> 1835, xlvii (693) etc.
St Kitts	1832-4	72	
Nevis	1832-4	49	
Montserrat	1832-4	29	
<i>Jamaica</i>			
Jamaica	1728	19	Bean, 'Food Imports', 582
Egypt	1754-67	11	Monson MSS, Thistlewood Diaries
New Found River	1777-9	66	Vassall MSS, Vassall to Wedderburn, 7 Nov. 1778
Jamaica	1789	51	Sheridan, 'Crisis of Slave Subsistence', 640
Spring	1794	26	Smyth MSS, AC/WO 16(27), accounts
Pleasant Hill	1812	61	Slebech MSS, 9503, accounts
Jamaica	1815-16	53	Edwards, <i>West Indies</i> , v, Appendix, 47-53
Mesopotamia	1817	109	Dunn, 'Two Plantations', 53
Jamaica	1832-4	80	<i>Parl. Papers</i> 1835, xlvii (693) etc.
<i>New colonies</i>			
Waltham, Grenada	1791	90	Home of Wedderburn MSS, GD 267 7/1
St Vincent	1794-1805	64	Ragatz, <i>Statistics</i> , 6
Good Hope, Trinidad	1823	200	Cochrane MSS, MS 2303
Ceded Islands	1832-4	80	<i>Parl. Papers</i> 1835, xlvii (693) etc.
Trinidad	1832-4	139	
British Guiana	1832-4	119	

^a For assumptions about container sizes, see below, endnote 3.

profit. While returns held up, as they usually did until the end of the Napoleonic period, planters felt that they could afford larger purchases; then the post-war depression limited further progress. Where sugar planting was exceptionally lucrative, as in eighteenth-century St Kitts or early nineteenth-century Trinidad and Demerara/Essequibo, fish rations were more generous than usual;¹²⁶ where the long-term fall in profitability was most severe—in St Kitts and perhaps also Montserrat—they were held constant.

However, slave diet consisted mainly of grain or vegetables, and it is much more difficult to evaluate the various means by which they were provided. Between the 1770s and the early 1830s imports of corn, beans, and other basic foods to Barbados and the Leewards fell by about 70 per cent, with most of the decline occurring after the Napoleonic wars. There was a particularly sharp reduction in deliveries of Indian corn to Barbados, and on St Kitts coarser items were extensively substituted for wheat flour in the slaves' rations. Shipments of horsebeans from Great Britain to the West Indies ceased almost completely during the 1820s.¹²⁷ On the other hand the changes in the methods of sugar planting that have already been reviewed for these islands were designed at least in part to increase local food production, so to what extent did agricultural innovation compensate for economies in the use of imports?

In Jamaica per caput imports of food other than fish did not change much over the period of slavery,¹²⁸ but here locally grown supplies from the provision-ground system were always most important. During Jamaica's first century as a sugar colony

¹²⁶ The fish ration of 2 lbs. per week stipulated for apprentices by the Barbados emancipation act of 1834 was double the local norm and caused a good deal of confusion. It resulted from pressure by the Colonial Office, whose standards had apparently been established through its dealings with relatively affluent Crown Colonies such as Demerara and Trinidad: C. Levy, *Emancipation, Sugar and Federalism: Barbados and the West Indies, 1833-1876* (Gainesville, 1980), 39-40; *The Colthurst Journal: Journal of a Special Magistrate in the Islands of Barbados and St. Vincent, July 1835-September 1838*, ed. W. K. Marshall (Millwood, NY, 1977), 16-17.

¹²⁷ PRO, Naval Office Shipping Lists, T. 1/493, 498, 502, 507, 509, Leeward Islands 1772-4; T. 64/48-9, Barbados 1772-4; Cust. 6/1, Ledger of Imports into Colonies 1832; Cust. 8/1-22, Ledgers of Exports of British Merchandise 1812, 1814-34; R. Davis, *The Industrial Revolution and British Overseas Trade* (Leicester, 1979), 88.

¹²⁸ Bean, 'Food Imports', 583-6; PRO, CO 141, *Royal Gazette*, 1818-29; Revenue, Population, and Commerce of the United Kingdom for 1832, *Parl. Papers* 1835, xlvii (693):

masters had rarely troubled themselves in detail with the slaves' cultivations, apart from moments of concern about the vulnerability to wind damage of the plantain trees, increasingly the local mainstay. Long intervals between major storms encouraged complacency, and the rapid sequence of hurricanes in the early 1780s, coinciding with the uncertainties caused by the American War of Independence, was required to promote serious efforts at reform.¹²⁹

One possibility was for the planters themselves to organize more food growing, but outside the district of Vere, where Guinea corn was raised together with sugar cane, on the same principles as in Barbados, this approach gained few followers.¹³⁰ Jamaica's great tracts of marginal land made the conversion of cane pieces to food crops seem an unnecessary sacrifice, and account also had to be taken of the special need on this island to restrain theft and running away. Most efforts at improvement therefore aimed to make the provision grounds more reliable. During the 1770s and 1780s various exotic plants were introduced in the search for a miraculous guarantee of self-sufficiency, yet of these only the mango ever became an important addition to the slaves' diet,¹³¹ and soon attention turned to reviving the use of more familiar root crops, especially yams and cocos. The great point in their favour was that they could survive adverse weather more successfully than plantains. However, they required better soils, and a good deal more labour.

A number of masters believed, or claimed to believe, that the neglect of ground provisions was a result of the slaves' idleness, and that the necessary reforms could be achieved by tighter management. Although hunger was undoubtedly the main sanction against improvidence, the slaves had rarely been left to tend their allotments just as they pleased. On the days set aside for this task a black driver was occasionally sent out to encourage diligence, or the overseer paid a visit, perhaps taking the chance to copulate with some woman who caught his fancy.¹³² Regular

¹²⁹ Vassall MSS, W. Vassall to J. Wedderburn, 10 June 1771, 30 July 1777, 1 Nov. 1785; Edwards, *West Indies*, i. 234.

¹³⁰ Craton and Walvin, *Jamaican Plantation*, 153 n. 62; Higman, *Jamaica*, 122; Fitzherbert MSS, records of Vere estate.

¹³¹ J. H. Parry, 'Plantation and Provision Ground: An Historical Sketch of the Introduction of Food Crops into Jamaica', *Revista de historia de America*, xxxix (1955), 12-19.

[See p. 110 for n. 132]

inspections of the provision grounds were formally enjoined by law for the first time in Jamaica's consolidated Slave Act of 1788.¹³² Planters also attempted to prevent the slaves from selling food when it was in short supply, and to correct the unequal distribution of holdings. Some slaves, usually those with a privileged position in the estate hierarchy, recruited others to assist them. Such employees, without grounds of their own, might then be abandoned at times of scarcity. The problem was discussed with a new urgency after the American war.¹³⁴

Nevertheless it is doubtful whether close supervision of this kind had much effect. At the time of emancipation the overseers on some estates claimed that the provision grounds were regularly inspected, as required by law, but many admitted their ignorance of what they clearly regarded as the slaves' private arrangements.¹³⁵ The suspension of estate work, when the slaves went to their grounds, was the time for relaxation and sociability among the white men, and it took considerable dedication to fulfil a duty that often entailed a journey of several miles into the mountains. Differentiation in the size of allotments persisted, indeed some West Indian apologists boasted of the opportunities allowed to the more 'industrious' slaves to achieve relative affluence. Individuals without holdings of their own seem to have been quite rare on Jamaican estates by the 1820s,¹³⁶ but any change on this point probably resulted from the closure of the slave-trade. It had always been recognized that inexperienced Africans were the most likely to fall into dependence on other slaves, especially when they had been placed as newcomers with established households for acclimatization to plantation life. West Indian-born slaves, in contrast, 'very knowing and artful' according to one report, were better able to secure their own

¹³² Monson MSS, Thistlewood Diaries, 7 June 1754, 2 Aug. 1758, 1 and 29 Sept. 1759, 15 Dec. 1759.

¹³³ Sheridan, *Doctors and Slaves*, 166.

¹³⁴ Vassall MSS, W. Vassall to J. Wedderburn, 11 July 1778; Fitzherbert MSS, WI/9, W. Sutherland to Messrs Jaques and Fisher, 8 Aug. 1782, 9 Apr. 1787; M. G. Lewis, *Journal*, 333.

¹³⁵ Report from the Select Committee ... upon ... the Extinction of Slavery, *Parl. Papers* 1831-2, xx (721), QQ. 21, 320, 1612; Papers in Explanation of Measures adopted for giving Effect to Abolition of Slavery Act, *Parl. Papers* 1836, xlviii (166), 272-89 *passim*.

¹³⁶ See the account of the slaves' allotments on Lord Seaford's estates in 1825: Report from the Select Committee ... to inquire into the Commercial State of the West India Colonies, *Parl. Papers* (House of Lords) 1831-2, cccvii (127), 1376-93.

interests. For example, when moved away temporarily from the home estate, they could be expected to work on local provision grounds for a predetermined wage, paid in cash, rather than vague promises of support.¹³⁷ Subordinate relationships among the slaves seem to have been most common in the newer colonies, which had greater proportions of recently arrived Africans. On Trinidad in the 1820s many slaves were said to work no gardens of their own, but hired themselves out to the principal negroes.¹³⁸ A listing of slave families on a Demerara sugar plantation is remarkable, in comparison with similar documents from Jamaica and Barbados, for the large size of the groupings headed by drivers and tradesmen.¹³⁹

While the planters probably had little effect on the details of the provision-ground system, they could more usefully seek to improve the general context in which it operated, especially by increasing the extent and quality of the land available to the slaves. Surviving proprietors benefited from the liquidation of marginal estates by adding to their own holdings, partly to secure better maintenance of livestock, but also to assist with the feeding of the labour force.¹⁴⁰ At the same time the slaves were allowed to range more freely over the hillsides, encroaching on woodland which had previously been reserved to supply fuel, although this could require justification to an absentee owner:

The Negroes on the Estate have occupied all the Mountain land with their Provision grounds. You may probably observe that surely they have too much land for their provision grounds. But the case is this. Their ground Provisions such as Yams Cocos Potatoes &c will not bear except in new Land out of the woods or in such land as has been allowed to lye over for several years & grow up with bushes. The way that the negroes do is—After they take one or two Crops of Cocos or Yams from their grounds they then allow that ground to grow up for several years in bushes and in the mean time they clear and plant some other land by which means they occupy a much larger quantity of land than one would think was necessary for them. But from the dreadful

¹³⁷ Fitzherbert MSS, WI/9, D. Munro to W. P. Perrin, 6 Nov. 1770.

¹³⁸ PRO, CO 320/2, pt. II, 'Precis of Mr Burnley's Speech 15 May 1824'.

¹³⁹ PRO, T. 71/411, Demerara Slave Registration Returns 1823, fos. 2631-9; Gladstone MSS, CH 55, inventory of Vreedenhoop plantation 1825; and see below, ch. 5 n. 152.

¹⁴⁰ Fitzherbert MSS, WI/9, W. Sutherland to W. P. Perrin, 17 Aug. 1784; Slebech MSS, 9470-93, N. Phillips's correspondence concerning the purchase of Boxford Lodge estate 1789-91.

scarcity and famine which prevailed during the several years that we were afflicted with Hurricanes it was thought necessary to throw out every inducement to the Negroes to plant plenty of ground Provisions and to depend less upon their Plantane walks so that we are careful to allow them as much land as possible for ground Provisions and never to deprive them of any that they have once cleared.¹⁴¹

In these ways the average size of the provision grounds was increased (Table 8).

Extra land could not be of much value without sufficient time to work it. For most of the eighteenth century the Jamaican practice had been to allow every Sunday free from estate labour, with an extra day (usually Saturdays) in alternate weeks out of crop, unless there was some especially urgent task to complete. In addition one or two days' holiday were taken at Christmas, with another day at Easter. Thus the slaves received a total of about fifteen free days, as well as Sundays, during the course of each year. In periods of acute stress, for example during the drought of 1764-5 on Egypt plantation, five or six more days might be given, probably in order to scavenge, for it could not have been possible to do much useful work on the provision grounds at such times.¹⁴²

The Jamaican slave code of 1788 merely gave legal force to the customary day per fortnight out of crop, but in the early nineteenth century current practice began to go beyond this, most commonly by allowing every Saturday after the harvest had been completed. Mathew Lewis alleged that an additional day per fortnight increased the slaves' attachment to distant grounds: it 'enables them to perform their task with so much ease as almost converts it into an amusement', and with the need to bring home only a week's supply at once the likelihood that provisions would be bartered away for rum in the mean time was reduced.¹⁴³ Thus twenty-six free days a year (exclusive of Sundays and other public holidays) became the norm, recognized by law in 1816,¹⁴⁴ although variations between properties

¹⁴¹ Fitzherbert MSS, WI/9, Sutherland to Perrin, 20 Dec. 1795.

¹⁴² Monson MSS, Thistlewood Diaries; Long, *Jamaica*, ii, 491; Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 20 July 1764; Slebech MSS, 11523, N. Phillips's instructions 1789.

¹⁴³ Sheridan, *Doctors and Slaves*, 166; Clarendon MSS, Dep. c 428, J. F. Barham to J. Blyth, 15 Aug. 1815; Lewis, *Journal*, 76-7, 120.

¹⁴⁴ Higman, *Jamaica*, 132, 211; W. Scells, *Remarks on the Condition of the Slaves in the Island of Jamaica* (1823), 37.

TABLE 8. *Provision Grounds in Jamaica, 1751-1829 (Acres per Slave)*

Estate or owner		Provision ground	Plantain walk ^a
(1) Vineyard pen	1751	0.33	0.29
(2) Beckford	1754	0.25	
(3) Hampden, Frontier	1770-3	0.88	
(4) Long	1774	0.25	0.25
(5) Bossue	1784	0.33	
(6) Longville	1788	0.50	0.20
(7) Phillips	1789	0.70	0.20
(8) Spring	1794	0.63	
(9) Grange Hill	1810	0.72	
(10) Blue Mountain	1812	0.79	
(11) Montpellier	1825	0.68	
(12) Blue Mountain	1829	0.69	

^a Separately designated plantain walks were largely for the use of the white men.

Sources: (1): Monson MSS, Thistlewood Diaries, 10 June 1751; (2): Monson MSS, 31/86, Richard Beckford's instructions, fo. 5; (3): Stirling of Keir MSS, T-SK 21/3, inventories; (4): Long, *Jamaica*, i. 459; (5): Tharp MSS, R.55.7.123.3, inventory; (6): Craton, Walvin, and Wright, *Slavery*, 102; (7): Slebech MSS, 11523, inventory; (8): Smyth MSS, AC/WO 16(43)5, inventory; (9), (10), (12): Fitzherbert MSS, W1/15-17, surveys; (11): Report from the Select Committee on the State of the West India Colonies, *Parl. Papers* (House of Lords) 1832, ccvii (127), 1376-93.

in the rate of progress could cause friction and resentment.¹⁴⁵ As a rule the populations of the coastal parishes, close to the main towns and circuits of information, were the most alert. Thus in 1825 the newly appointed attorney of a Westmoreland estate, not far from the port of Savanna-la-Mar, reported some early difficulties:

The different accounts you had of the Mesopotamia Negroes last year from Mr. Morrice, is owing to his being informed they had taken the 24th of December to themselves, and at the finishing of Crop that on the second Saturday following only seven Negroes turned out. It appears to be customary in this parish to give every Saturday, out of

¹⁴⁵ *Parl. Papers* 1831-2, xx (721), QQ. 25-7, 89, 168, 182, 1612, 5025. A witness mentions a proprietor who gave 52 Saturdays a year because he wanted his slaves to attend church on Sundays. Another estate gave 33 free days: Sturge and Harvey, *West Indies in 1837*, Appendix, p. lxxvii. See also below, ch. 6 n. 99.

Crop, which I was not acquainted with at the time. Since I have done it, they have behaved well.¹⁴⁶

During the previous year a rebellion had been provoked on the Argyle estate in the adjacent parish of Hanover by a similar dispute over Saturday working.¹⁴⁷

Over this period extra time was also being allowed in the new colonies, most of which relied on provision grounds.¹⁴⁸ Demerara/Essequibo and Berbice departed from the common pattern by maintaining large plantain walks under direct estate supervision, in addition to plots cultivated individually by the slaves. The territories' freedom from hurricane probably made this a safer practice than elsewhere, although some difficulty arose with a disease which attacked the plantain trees in the 1820s, and there is insufficient evidence to determine the standards of diet that resulted.¹⁴⁹

Clearly planters in all the main sugar islands made serious attempts to increase local food supplies, whether as an integrated part of estate operations or through the provision grounds. But to what extent did they succeed? As for the earlier period, information about acreages and yields is still not adequate to support estimates of output, and levels of feeding can only be deduced indirectly. Reported or recommended allowances do seem to have increased as time passed. In Barbados seven pints of corn a week had been the conventional standard about the middle of the eighteenth century, but in the 1780s a leading planter wrote privately that while each slave must have 1 or 1½ pints of corn daily, and some masters were so inhumane as to give less, others gave 2 pints. In 1795 the weekly ration of this man's own slaves was 12 pints. Early nineteenth-

¹⁴⁶ Clarendon MSS, Dep. c 359, Bundle 4, W. Ridgard to J. F. Barham, 30 Aug. 1825.

¹⁴⁷ M. Turner, *Slaves and Missionaries: The Disintegration of Jamaican Slave Society, 1787-1834* (Urbana, Ill., 1982), 48, 200.

¹⁴⁸ Thus the *Letters to a Young Planter* (1785), based on Grenadan experience, recommended half a day out of crop as enlightened practice, not always followed. Shortly before emancipation Waltham estate, Grenada, gave a full day almost every week out of crop: Home of Wedderburn MSS, GD 267 25/31, 113, day books 1830-3.

¹⁴⁹ In the early 1830s the legally prescribed weekly ration for an adult working slave in Demerara/Essequibo was 45 lbs. of plantains. However, it was reported that by general custom as much as 56 lbs. might be given, equivalent to 16 pints of unmilled corn: Higman, *Slave Populations*, 208-10; *Parl. Papers* 1837-8, xlix (154.11), 106-7. By 18th-century British West Indian standards this was probably generous, bearing in mind that most Demerara slaves also had gardens of their own: Craton, *Testing the Chains*, 275.

century sources mention $1\frac{1}{2}$ or 2 pints of corn daily, or the equivalent in root vegetables, that is 4–5 lbs. of yams or potatoes.¹⁵⁰ When the Leeward Islands' assemblies in 1798 passed a law intending to promote amelioration, and prescribing 9 pints of corn or beans per week, this was said to represent an increase of a third on local practice.¹⁵¹ Similar claims were made about the allowances required under the Jamaican slave codes for slaves without grounds of their own.¹⁵²

Nevertheless, statements of this kind, often made by planters as self-justification, provide a doubtful guide to actual practice. Also rationed allowances met only a part of consumption: even in the smaller islands the slaves were still expected to help themselves, by means whose productivity cannot be estimated. For example, there are reports from early nineteenth-century Barbados implying that slaves could take their own share in the renaissance of the colony's sugar planting. On one estate shortly after emancipation 393 labourers held between them 91 acres of land, 131 animals, and 146 poultry: '... many of the apprentices plant canes from which this year [1836] they have made nearly 150 pounds sterling by the sale of sugar, rum and molasses'. The relative abundance of small stock on Barbados—much of it traded to other islands—was attributed to the slaves, who also raised aloes, arrowroot, and ginger for export.¹⁵³ On the other hand, so large a share of the colony's land was claimed for estate operations that as a whole the slaves' parallel economy could not have been very substantial, and unlike Jamaica there is no real evidence that they were allowed much more free time for its development.¹⁵⁴ It may be that increased grain rations on

¹⁵⁰ See above, ch. 2 n. 23; Fitzherbert MSS, W1/17, J. G. Alleyne to W. Fitzherbert, 1786; Alleyne to Lady Fitzherbert, 20 Oct. 1795; memorandum on Alleynedale estate c.1834; Higman, *Slave Populations*, 205–7; Porter, *Sugar Cane*, 326; Sturge and Harvey, *West Indies in 1837*, 130; Davy, *West Indies*, 127. As before, these figures are averages for adult working slaves.

¹⁵¹ Sheridan, *Doctors and Slaves*, 170; Bodrhyddan MSS, R. Thomson to Revd W. D. Shipley, 9 May 1798.

¹⁵² Sells, *Remarks*, 11–12.

¹⁵³ *Colthurst Journal*, 17, 80; Pinckard, *Notes*, i, 292; Higman, *Slave Populations*, 207. After the Barbados rebellion of 1816 it was claimed that owners had allowed their slaves 'to become comparatively rich, by rearing and selling poultry, sheep, goats, hogs, and their superfluous allowance of corn and roots,—all of which induced the negroes to assume airs of consequence, and put a value on themselves unknown among the slaves of former periods': quoted in Craton, *Testing the Chains*, 257–8. But the observations of colonists at such moments of alarm cannot be trusted.

¹⁵⁴ Slaves on Barbados were regularly allowed only Sundays free from estate work: J. S. Handler, F. W. Lange, and R. V. Riordan, *Plantation Slavery in Barbados: An Archaeological*

Barbados were necessary to make up for the virtual elimination of the plantain walks there after 1780.¹⁵⁵

On St Kitts the slaves got extra provision grounds when the cane acreage declined, and were allowed once more to grow yams as a fallow crop on the remaining sugar land. They supplemented their gardens with orange and coconut trees. (The fruit was bartered for 'dog loaves' of wheaten bread.) However, the decline of food imports to St Kitts was particularly sharp, and about 1830 many of the fruit trees were blighted.¹⁵⁶ Although there are clear signs that the provision grounds and the use of root crops were extended in Jamaica, these improvements had to work here against continuing ecological deterioration. Yams cropped well on areas recently cleared from the woods, but by the 1820s the most accessible mountain land had been reduced to an inferior scrub or coarse grasses.¹⁵⁷ Periods of scarcity still occurred, especially during the summer months,¹⁵⁸ and local definitions of a 'full' diet for those slaves, such as work-house inmates, who had no grounds of their own did not become any more generous than standards current in the middle of the eighteenth century.¹⁵⁹

and Historical Investigation (Cambridge, Mass., 1978), 82. From 1819 the Codrington estates gave Saturday afternoons off, but this was a revival of an old privilege: Bennett, *Bondsmen and Bishops*, 103.

¹⁵⁵ Pinckard, *Notes*, i, 300.

¹⁵⁶ Romney MSS E 303, account of land on Jefferson's plantation, 24 Aug. 1811; E 289A, R. Cardin to Lord Romney, 9 July 1831.

¹⁵⁷ Thistlewood during his time in the parish of Westmoreland from 1750 to 1786 rarely referred to yams as a provision-ground crop, but they were common locally by 1817: Lewis, *Journal*, 94. Plantains continued to be extensively grown, especially in the more densely settled coastal areas where there was little free land suitable for ground provisions: Stirling of Keir MSS, T-SK 11/3, A. Stirling to W. Stirling, 10 Sept. 1790; Fitzherbert MSS, W1/9, W. Sutherland to W. P. Perrin, 23 Nov. 1800; Penrhyn MSS, 1544, J. Shand to G. H. D. Pennant, 6 Oct. 1816.

¹⁵⁸ G. Mathison, *Notices respecting Jamaica in 1808, 1809, 1810* (1811), 27-34; Penrhyn MSS, 1477, D. Ewart to Lord Penrhyn, 6 Aug. 1807; Clarendon MSS, Dep. c 358, Bundle 2, J. Blyth to J. F. Barham, 7 July 1817.

¹⁵⁹ Sheridan, *Doctors and Slaves*, 170; Higman, *Slave Populations*, 251-2; Craton and Walvin, *Jamaican Plantation*, 137; and see above, ch. 2 n. 25. Two or 3 pints of corn per day remained the norm for a full diet. The increase in the money allowance prescribed by law for slaves without grounds, from 2s 6d Jamaican currency in 1788 to 3s 4d in 1819, was matched by the concurrent rise in food prices. However, the stipulated sum was then maintained up to the early 1830s, over a period in which food prices may have fallen: Sheridan, *Doctors and Slaves*, 166; Higman, *Slave Populations*, 210, 254; Sells, *Remarks*, 11-12; Higman, *Jamaica*, 236; O. Patterson, *The Sociology of Slavery: An Analysis of the Origins, Development and Structure of Negro Slave Society in Jamaica* (1967), 226-8.

As with the earlier discussion of sugar planting, the evolution of feeding practices can be followed most closely on the Parham estate in Antigua. Through the middle decades of the eighteenth century this property, like its neighbours, made sufficient purchases to give each slave on average six or seven pints of Indian corn or horsebeans a week. The average was not however regarded as a 'normal' or subsistence allocation. Imported food was particularly reserved for those times of the year, usually from July or August, 'when all sort of provisions in this country are most scarce and dear'. Rations could be cut back again in the spring as the produce of the slaves' own gardens reached maturity, while at the same time 'the [sugar] crop coming in will also help a little, for negroes will live upon half allowances when they have plenty of canes to suck'.¹⁶⁰ Yet if the island suffered from drought and these local resources failed the effects could be disastrous. During the American War of Independence, 'all the Negroes in the Island are in great distress both for want of provisions and Water and are consequently in bad order. Yours worse than ever I knew them, though every grown Negroe has ten pints of Beans per Week, and the young ones in proportion'.¹⁶¹ Over the next two years the rate of mortality doubled, and it was as a result of this experience that the regular cultivation of yams on part of the cane land first began in the early 1780s. In addition to this new means of supply, the customary level of food purchases continued, so there must have been a significant improvement in diet.¹⁶²

By the 1820s Parham's use of imported provisions had been sharply curtailed, to an even greater extent than for the island of Antigua as a whole, but the programme of food growing recorded in the estate's work journals implies that this reduction had been more than fully made up by recent changes in the system of agriculture.¹⁶³ Parham's own yams and eddoes now

¹⁶⁰ Tudway MSS, Boxes 8-10, 13, Parham plantation accounts and invoices 1689-1805; Box 15, Letter Book from Antigua 1759-84, R. Holloway to C. Tudway, 10 Oct. 1759; M. S. Walrond to C. Tudway, 20 Sept. 1766, 3 July 1769; F. Farley to C. Tudway, 29 Dec. 1775. On Nevis in the 1780s slaves were allowed 4-6 pints of corn per week in crop, but 8-9 pints after it was completed: Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Nevis, No. 6. The Leeward Islands act of 1798 permitted a reduction of one-fifth in the set allowance during crop time: Sheridan, *Doctors and Slaves*, 171.

¹⁶¹ Tudway MSS, Box 15, Letter Book, M. S. Walrond to C. Tudway, 27 Sept. 1778; Box 9, stock accounts 1776-1803.

¹⁶² Tudway MSS, M. S. Walrond to C. Tudway, 26 June 1782.

accounted for most of the allocated rations, and the other novelty was in the seasonal pattern of their distribution. Whereas in the eighteenth century it had been reckoned that slaves required most assistance towards the end of each year, and the sugar harvest was seen as an opportunity to put them on short commons, by the nineteenth century allowances were most liberal from January to June or July. During this time they averaged 28 lbs. of ground provisions weekly per slave, a third more than the ration required by the Leeward Islands act of 1798. The slaves were expected to be largely responsible for their own subsistence only from September to November, again in contrast to the eighteenth century. In the earlier period the slaves had usually raised yams, which were ready to eat in the spring; subsequently this crop had been concentrated on to the cane land where it could be assisted by the use of the plough and organized gang labour, while the slaves' plots were devoted to corn and sweet potatoes, grown for an autumn harvest. Although the yields from the slaves' own grounds cannot be estimated, the increased rations given during the sugar crop suggest that planters' views on slave maintenance had become more generous.

Probably Parham was unusually resilient and well ordered, so it would be rash to assume that all other estates matched its standards. For example, at Romney's on St Kitts during the 1820s the weekly ration was limited to 21 lbs. or less of ground provisions. Nevertheless, to judge by their population patterns, Parham was the closer of these two properties to contemporary norms. On the Antigua estate, as for the Leeward Islands in general, by the period immediately before emancipation slave births almost exactly matched deaths, while Romney's population suffered heavy natural decrease and showed other symptoms of exceptional mismanagement or economic difficulty.¹⁶⁴ But the slaves' demography, the most abundant source of information on their material state, requires more thorough discussion as a separate topic.*

* See endnote 4.

¹⁶³ Tudway MSS, Box 14, Monthly Journals of Plantation Works 1823-9.

¹⁶⁴ Romney MSS, A 143, work journals 1827-33. Apart from its declining population, in the early 19th century Romney's profits and sugar yields fell even more sharply than for St Kitts as a whole, and it was troubled to an unusual extent with running away by its slaves. For the Leeward Islands' population trends see below, Table 31.

Demographic Results

So far we have been concerned with reforms in agriculture and slave maintenance, adjustments which were promoted at least partly as a response to growing difficulties in the supply of new labour from Africa, and the need to reduce the excess of deaths over births on the estates. To the extent that this haemorrhage had been the result of hard work and poor feeding, was it curtailed by the new regime, and if so, what consequences followed for the plantation economy? Were the extra costs to the planters entailed by less severe treatment repaid by the lives that were saved among their labour force? Did amelioration make slavery more or less profitable? How much of any improvement in the slaves' rate of natural reproduction can be attributed to deliberate management, rather than impersonal forces, such as a changing disease environment, which lay beyond the planters' control?

Here we shall concentrate first upon matters of fact, with the aim of establishing what was the slaves' rate of natural decrease in the eighteenth century, whether this depletion rate¹ fell as time passed, and, if so, whether variations in mortality or fertility had a more powerful effect. It will then be possible to consider other problems of causality, in particular the relationship between vital rates and estate regimes. Before proceeding, however, it is necessary to emphasize some difficulties that arise from the nature of the available information. British West Indian slave demography has been the subject of several detailed studies, based principally upon early nineteenth-century sources, both the statements of deaths and births kept privately for individual estates, and the returns made to registrars of slave

¹ The term *depletion rate* will be used as shorthand for the *rate of natural decrease*, that is, the excess of a population's crude death rate over its crude birth rate. Unless stated otherwise this and all other demographic statistics will be given as annual rates per thousand of the population.

population.² A system of public registration operated in all the British slave colonies by 1817, requiring periodic (usually triennial) reports of any change in slave holdings, whether through births, deaths, purchases, or sales. The procedure was established under pressure from British humanitarians as an insurance against illegal slave-trading, and slave owners who failed to comply were liable to considerable fines. Private records were intended to give absentee planters a means of ensuring that estate capital was being properly maintained. Whatever their origin, successive population returns could be quite easily cross-checked on most points for internal consistency, and as each proprietor had strong inducements to require accuracy, it is likely that surviving records are of a fairly high quality.³ Thus it has been possible to establish the main demographic characteristics of British West Indian slavery immediately before emancipation. For example, local variations within and between particular colonies show clearly how sugar planting, compared to other crops such as coffee or cotton, brought higher rates of natural decrease, presumably the effect of harsher material circumstances. But it is more difficult to make comparisons over time, between the eighteenth and nineteenth centuries, because for the earlier period primary sources are much less abundant: there was no counterpart of the registration returns, and estate records were kept erratically. So in studying long-term development it is necessary to collate a good deal of rather fragmentary evidence. As before, attention is concentrated on slaves employed in sugar planting, although there will be some incidental discussion of the demography associated with other crops.

² In particular, Higman, *Jamaica*; Higman, *Slave Populations*; Dunn, 'Two Plantations'; M. Craton, 'Hobbesian or Panglossian? The Two Extremes of Slave Conditions in the British Caribbean, 1783 to 1834', *William and Mary Quarterly*, 3rd Ser. xxxv (1978), 324-56. Copies of the original Returns of Registration of Slaves survive at the Public Record Office in the class T. 71. An abstract is printed in the Return of the Numbers of the Slaves in each of the West India Colonies, *Parl. Papers* 1833, xxvi (539), and analysed by B. W. Higman, 'The Slave Populations of the British Caribbean: Some Nineteenth-century Variations', in S. Proctor (ed.), *Eighteenth-century Florida and the Caribbean* (Gainesville, 1976), 67-70.

³ Higman, *Jamaica*, 45-50. The one serious weakness of slave population returns is in the under-recording of infants who died shortly after birth: see below, 129-31.

THE RATE OF DEPLETION

To begin with general tendencies, the registration returns show that depletion rates averaged about 3 in the British West Indian sugar colonies between 1817 and 1832: that is, the slaves were only just short of maintaining their numbers by natural reproduction. On the other hand, during the eighteenth century some published reports had put depletion rates as high as 50 or 60, although most of these came from individuals with motives for exaggeration, either planters complaining of economic distress or their critics denouncing the evils of slavery.⁴ Information from estate records would be preferable, but these are rather sparse before the 1780s and the properties to which they relate may not be representative. Depletion rates can also be estimated by combining information on the volume of slave imports and the size of island populations. This method gives a wider coverage than the papers of individual plantations, but adequate slave-trade statistics are not available for some colonies. As each class of evidence has its weakness, they are combined here to support or correct each other.

The most complete records of slave imports and re-exports come from Jamaica, implying depletion rates of about 30 in the first half of the eighteenth century and 25 from the 1750s to the 1770s.⁵ Estate papers after 1750 suggest rather lower rates of loss—about 20 on average—probably because they usually reflect conditions on the more mature, fully developed properties.⁶ When new plantations were being cleared from the woods losses are likely to have been much heavier, although accounts from the first stages of settlement give little detailed information about mortality.⁷ The American War of Independence provoked

⁴ Dunn, *Sugar and Slaves*, 23; R. B. Sheridan, 'Africa and the Caribbean in the Atlantic Slave Trade', *American Historical Review*, lxxvii (1972), 21.

⁵ M. Craton, 'Jamaican Slave Mortality: Fresh Light from Worthy Park, Longville and the Tharp Estates', *Journal of Caribbean History*, iii (1971), 24; R. B. Sheridan, 'Slave Demography in the British West Indies and the Abolition of the Slave Trade', in D. Eltis and J. Walvin (eds.), *The Abolition of the Atlantic Slave Trade: Origins and Effects in Europe, Africa, and the Americas* (Madison, 1981), 274-8.

⁶ Some examples of indicated rates of depletion are: Mesopotamia 1751-76, 19 (Clarendon MSS, Dep. b 37, 'Mesopotamia Returns 1751 to 1777'); Stanton 1764-78, 9, Harbourhead 1766-78, 13 (Slebech MSS, 8795-6, stock accounts); Spring 1761-91, 37 (Smyth MSS, AC/WO 16(27), accounts).

[See p. 122 for n. 7]

loud complaints of the damage done by the disruption to the provision trade, especially after the hurricanes of the 1780s, yet while the growth of Jamaica's slave population may have been interrupted, mortality on individual estates does not seem to have been especially severe.⁸ After the American war the depletion rate at first fell only gradually. Edward Long gave an estimate of about 20 for Jamaica in 1788, and the island's retained imports of slaves suggest that natural decrease averaged 16 per annum between 1789 and 1808,⁹ although absentee owners claimed heavier losses in their returns under the new income tax.¹⁰ The closure of the transatlantic slave-trade was followed by a more rapid improvement, which by the registration period from 1817 had reduced the depletion rate to 3 in Jamaica as a whole, and about 6 on its sugar estates.¹¹

The early experience of the other islands is rather more debatable. From the records of its slave-trade Barbados seems to have suffered depletion rates that were considerably worse than Jamaica's: 49 from 1701 to 1725, 36 from 1726 to 1750, and 37 from 1751 to 1775.¹² However, while the deterioration of agriculture in Barbados may have made conditions especially harsh, it is doubtful whether they were quite so bad as these figures suggest. Estate papers give a more favourable impression, at least after the middle of the eighteenth century. Thus while the depletion rate on the Codrington plantations averaged 47 in the period 1712-48, it was only 13 there between 1773 and 1782, and 15 at Turners Hall between 1757 and 1780.¹³ The most

⁷ In the settlement of Tobago after 1763, 'the air being cold and unwholesome on account of the woods they are lucky if half the number of negroes live whom they send over': Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770-1, fo. 49. For heavy mortality on Dominica in the 1770s, see Senior MSS, E20, R. Bruce to W. Senior, 14 July 1775. However, one planter in 17th-century Jamaica went nearly 3 years without losing a slave: J. H. Bennett, 'Cary Helyar, Merchant and Planter of Seventeenth-century Jamaica', *William and Mary Quarterly*, 3rd Ser. xxi (1964), 68-9.

⁸ See below, endnote 2.

⁹ Craton, Walvin, and Wright, *Slavery*, 106; Klein, 'English Slave Trade'; McDonald, 'British Slave Trade to Jamaica', 253-8. I assume that Jamaica's slave population was 250,000 in 1789 and 354,000 in 1808: Edwards, *West Indies*, i. 282; Higman, *Jamaica*, 255-6.

¹⁰ Dundee MSS, GD 241/172, 'State of Dundee Produce and Supplies Crops 1805, 6, 7. Copy sent to the Commissioners at Glasgow', 1 Dec. 1808, reports on annual depreciation rate of 4%.

¹¹ Higman, *Slave Populations*, 308; Craton, 'Jamaican Slave Mortality', 10-12.

¹² Sheridan, 'Africa and the Caribbean', 29.

¹³ Bennett, *Bondsmen and Bishops*, 53-4, 73; Fitzherbert MSS, W1/17, Turners Hall inventories and stock accounts 1757-80.

likely reason for these discrepancies is that there were large, unrecorded exports of slaves from the island, so that the published import figures exaggerate local losses. Barbados was always an important entrepôt in the British trade from Africa, as the first port of call in the Caribbean, with easy access to many other settlements.¹⁴ For the Leeward Islands there are few slave-trade statistics of any kind and a depletion rate of 40 or 50 has been suggested by analogy with Barbados, but planters on Nevis and Antigua during the 1760s and 1770s expected it to run at rather less than 20.¹⁵ As with Jamaica, there is little evidence from these colonies of increased mortality during the American War of Independence, except on Antigua as a result of drought in the later 1770s and on Barbados through the hurricane of 1780. However, many estates show a considerable demographic improvement after the return of peace in 1782, with slave births regularly matching deaths for the first time: deliveries of new Africans had been reduced to very modest levels by the 1790s.¹⁶ Immediately before emancipation slave numbers were increasing through natural reproduction at annual rates of about 5 per thousand in the Leeward Islands and 10 per thousand in Barbados.¹⁷

Information about demographic trends in the newer colonies, very sparse before the early nineteenth century, suggests a long-term decline of depletion rates broadly similar to that achieved on Jamaica, although occurring later. On the Grand Bras estates, Grenada, natural decrease ran at 25 between 1776 and 1794, and 13 over the period 1797–1805. It was estimated at about 10 by an observer on this island in 1807.¹⁸ During the time of slave registration, depletion rates averaged 7 in the Ceded Islands and

¹⁴ Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Barbados, No. 15.

¹⁵ Sheridan, 'Africa and the Caribbean', 29; Tudway MSS, Box 15, Letter Book from Antigua 1759–84, F. Farley to C. Tudway, 10 Oct. 1766; Pares, *West-India Fortune*, 123–5; and see above, ch. 2 n. 68.

¹⁶ Tudway MSS, Box 9, stock accounts 1776–1803; Pares, *West-India Fortune*, 92, 123–7; Sheridan, 'Slave Demography', 278–81; Bennett, *Bondsmen and Bishops*, 96, 111–12; Fitzherbert MSS, W1/17, Turners Hall plantation accounts 1783–93; Stapleton-Cotton MSS, 23(v), Robert Thomson's account of his management of the St Kitts estate to 1789; Higman, *Slave Populations*, 428–9.

¹⁷ Higman, *Slave Populations*, 308.

¹⁸ Cooper-Franks MSS, Acc. 775/953/13, abstract of accounts 1773–1805; Home of Wedderburn MSS, GD 267 5/12, T. Duncan to G. Home, 20 July 1807. The effects of the unusually severe mortality associated with the rebellion of 1795–7 on Grenada have been excluded.

St Lucia,¹⁹ and 10 in Demerara/Essequibo, Berbice, and Trinidad. Unlike Jamaica, in most of these colonies the improving trend continued quite strongly through the last years of slavery. Thus the Ceded Islands/St Lucia depletion rate was 10 in the years 1815/17 to 1825/6, but only 3 from 1825/6 to 1831/3. For Trinidad the corresponding figures are 12 and 8.²⁰

Clearly this general decline in depletion rates must have been the result of either falling crude death rates, or rising crude birth rates, or some combination of the two. In turn, death rates might be reduced both through a fall in age-specific mortality and through a decline in the relative importance of those categories of population which have lower than average chances of survival, such as young infants or the very old. Birth rates are influenced both by fertility (the propensity of women to give birth) and by the share of the population accounted for by women of child-bearing age.²¹ For our purposes trends in mortality and fertility are of particular interest, as possible guides to the quality of estate regimes, but it is difficult to infer these vital rates from records of deaths and births because of the changing composition of British West Indian slave populations. When the islands were experiencing their most rapid economic development—usually in the first years of settlement—new slaves arrived from Africa in large numbers and were in a majority on the plantations. Then, as each colony came to be fully occupied and the pace of growth slackened, locally born slaves ('Creoles') became relatively more numerous; from 1808 the British transatlantic slave-trade was in any case prohibited by law. These developments affected the slaves' potential for natural increase in several ways. For example, most Africans were bought as adolescents, so their presence during the eighteenth century inflated the proportions of young adults in the West Indies, a factor which could normally be expected to favour low death rates and high birth rates. On the other hand, the imported slaves' age-specific mortality exceeded that of the Creoles by a

¹⁹ Originally a French colony, St Lucia was occupied by the British during the American War of Independence, and the Revolutionary and Napoleonic wars. It was finally ceded by France in 1815.

²⁰ Calculated from Higman, *Slave Populations*, 414–15, 606–7. The various colonies made their registrations in different years. For slave population trends in Jamaica after 1817 see below, endnote 5.

²¹ T. H. Hollingsworth, *Historical Demography* (1969), 15.

substantial margin, while birth rates may have been depressed by the surplus of males over females in the ships from Africa.²² So the slave-trade is generally agreed to have inhibited natural reproduction in the Caribbean, and its declining importance should have helped to bring down rates of depletion. Indeed it has been suggested that the reduced proportion of Africans accounts for most of the demographic improvement occurring in the British West Indies over the eighteenth and early nineteenth centuries, and that the results from any change in slave management were comparatively trivial. In Craton's words: 'Amelioration as a conscious policy was ineffectual and must be devalued.'²³

The focus of this argument is the particularly severe mortality suffered by Africans immediately after arrival in the Caribbean, as an effect of the trauma of enslavement, the transatlantic passage, and sudden exposure to a new disease environment. According to eighteenth-century reports and later historians, between a quarter and a half of new slaves could be expected to die during the process of 'seasoning', conventionally reckoned to last for three years after their arrival in the West Indies.²⁴ Thus Craton postulates annual mortality of 120 among 'fresh Africans', but of only 40 among slaves already established on 'settled plantations'.²⁵ By assuming rates such as these, it can be deduced that virtually all of the decline in depletion rates, from their presumed maximum of about 50 in the early eighteenth century, must have come through the growing ability of the sugar colonies to dispense with the slave-trade as they moved towards economic maturity. However, this approach runs into a number of difficulties. First, it cannot adequately account for the experience of islands such as Barbados or St Kitts, which were almost completely settled by the 1750s yet continued to import large numbers of Africans for another twenty years, without increasing their stock of slaves to any great extent.²⁶ It would be

²² See above, Table 1; below, Tables 10, 11.

²³ Craton, 'Jamaican Slave Mortality', 26.

²⁴ Sheridan, *Doctors and Slaves*, 132, 188; Sheridan, *Sugar and Slavery*, 242.

²⁵ Craton, 'Jamaican Slave Mortality', 26.

²⁶ Sheridan, *Sugar and Slavery*, 150; Edwards, *West Indies*, i. 345; Sheridan, 'Slave Demography', 278; Higman, *Jamaica*, 134-8. Net imports of slaves to St Kitts at the rate of about 2,000 per annum are recorded in the Naval Office Shipping Lists for 1772-4; PRO, T. 1/489, 498, 507.

remarkable if planters who did not need much extra labour had persisted with their purchases from Africa, in the expectation that most of the new slaves would die within a few years. Second, there are a number of more specific indications that the mortality of recently imported Africans has been rather exaggerated.

At Egypt plantation in Jamaica during the 1750s a fifth of the newly acquired slaves died during seasoning under Thomas Thistlewood's management.²⁷ On St Kitts in the 1760s and Jamaica in 1780 the usual rate of attrition was reported at from 10 to 20 per cent. On the Parham estates during the 1780s it was 8 per cent. In 1777 a Jamaican planter claimed that of fifty-two new negroes bought a few years earlier, fifty still remained with him. At Waltham plantation, Grenada, of ten slaves recorded as 'new negroes' in 1788, eight were still alive six years later.²⁸ On other properties such detailed information is lacking, but they offer strong circumstantial evidence that the mortality of new slaves was not the main cause of decrease. Blue Mountain, Jamaica, nearly doubled its strength through the purchase of Africans in the 1760s and 1770s, yet its depletion rate during this time was less than 10; during the later 1780s no slaves were bought, but its depletion rate was nearly 30. The records of the Grand Bras estates in Grenada between 1773 and 1805 also show no close association between slave purchase and mortality.²⁹ Another hint of only moderate mortality in seasoning is provided by the valuation of slaves in estate inventories: the usual premium commanded by seasoned African field labourers over unseasoned newcomers of similar ages stood at about 35 per cent. A part of this difference reflects the extra attention which the new negroes required during their early years on the plantation, their relative inefficiency as workers, and uncertainty as to their disposition, so their mortality must have been

²⁷ During Thistlewood's twelve months on a cattle pen in 1750-1 only 1 of 13 new negroes died. Of the 26 slaves that he later bought for his own use only 2 died in seasoning.

²⁸ Bodrhyddan MSS, J. Queely, 7 Apr. 1766; Vassall MSS, W. Vassall to J. Wedderburn, 5 July 1780; Tudway MSS, Box 9, stock accounts 1776-1803; Hall MSS, 1069/2, J. Kenyon to T. Hall, 24 Sept. 1777; Home of Wedderburn MSS, GD 267 5/17, stock accounts 1788-94.

²⁹ Fitzherbert MSS, WI/5, Blue Mountain plantation accounts 1759-89; Cooper-Franks MSS, Acc. 775/953/13, abstract of accounts of the Grand Bras estates, 1773-1805.

expected to exceed that of seasoned slaves by a much smaller margin.³⁰

It seems therefore that by the second half of the eighteenth century the rate of loss among new Africans through their first three years in the West Indies averaged about 15 or 20 per cent. How then did much higher estimates become current? Perhaps seasoning mortality had previously been more severe. In the 1730s a historian of Jamaica put it at 'almost half', and shortly afterwards on the Barbados estates of the Society for the Propagation of the Gospel it stood at 40 per cent.³¹ At this period the techniques of slave-trading were still incompletely developed; often the voyage from Africa was protracted, food ran short, and the slaves were made to drink sea water. In the West Indies dealers concealed the defects of their merchandise by methods which purchasers had not yet learned by experience to detect, such as concoctions of iron rust, gunpowder, and lime juice to suppress symptoms of yaws. But later decades brought improved, purpose-built ships, quicker voyages, better hygiene and provisioning, a reduction of losses in transit, and the delivery of healthier cargoes.³²

Also, as time passed more of the Africans were added to fully established properties and spared the rigours of the pioneering phase. It was possible to limit the numbers of new slaves purchased to no more than ten or twenty at a time, secure an adequate stock of food in anticipation of their arrival, and keep them out of the main field gang until they had gained strength. Estate correspondence was emphatic upon these principles of good management,³³ and the one authenticated instance of a very heavy rate of loss in seasoning that has so far come to light from the late eighteenth century—on

³⁰ Tudway MSS, Box 14, account of slave purchases 1751-89; Smyth MSS, AC/WO 16(27) 166(d), 'List of negroes ... on Spring Estate ... 1795'; Vassall MSS, W. Vassall to J. Wedderburn, 5 July 1780; Bennett, *Bondsmen and Bishops*, 61, 69-70; Pinckard, *Notes*, ii. 457.

³¹ Leslie, *Jamaica*, 328; Bennett, *Bondsmen and Bishops*, 48, 59-60.

³² Sheridan, *Doctors and Slaves*, 118-25; M. Craton, *Sineas of Empire* (1974), 96-7; R. Anstey, *The Atlantic Slave Trade and British Abolition 1760-1810* (1975), 414-15; H. S. Klein, *The Middle Passage: Comparative Studies in the Atlantic Slave Trade* (Princeton, NJ, 1978), 148-51, 155-60, 173-4; J. Grainger, *An Essay on the More Common West-India Diseases* (2nd edn., Edinburgh, 1802), 72.

³³ Clarendon MSS, Dep. b 37, 'Mesopotamia Returns 1751 to 1777'; Vassall MSS, W. Vassall to J. Wedderburn, 13 July 1770, 22 Apr. 1771, 29 Apr. 1776, 1 July 1777, 17 Oct. 1778; Long, *Jamaica*, ii. 433-5.

the Worthy Park plantation in the 1790s—occurred when they were neglected.³⁴ Exaggerated or outdated estimates of mortality among recently delivered Africans were however kept in circulation by the contemporary debate on slavery and the slave-trade. Humanitarian advocates naturally took the reputed horrors of seasoning as an instance of the evils requiring reform, and this was one point which many slaveowners were willing to go some way in conceding. The planters had to explain—without admitting their own cruelty—the indisputable fact that the estate labour force could still not be maintained by natural reproduction, so they claimed that persistent depletion should be attributed not to slavery's intrinsic evils, but to the poor condition of the African recruits. Inevitably, the argument continued, many slaves died shortly after arrival in the West Indies, usually from congenital or imported diseases, yet those who survived to enjoy their masters' care could look forward to a long and healthy life.³⁵ However plausible this reasoning might seem, it is severely qualified by the planters' own archives.

Apart from the experience of the new negroes, it is also doubtful whether the more general changes in population patterns associated with the end of the slave-trade could by themselves have done much to reduce the rate of depletion. This can be illustrated by taking information about age- and nationality-specific mortality rates from the well-documented early nineteenth century in conjunction with a representative eighteenth-century population structure (Table 9).³⁶ For example, applying the schedule of mortality affecting twelve Jamaican sugar estates between 1817 and 1829 (Table 11) to the population structure current in the same island during the eighteenth century yields a crude death rate of 29, lower than the rate of 31 which actually prevailed on the twelve estates from 1817 to 1820. Even when a reasonable allowance for earlier seasoning losses has been added to the nineteenth-century mortality schedules, the crude death rate indicated by the exercise with the eighteenth-century population structure is only 34. The displacement of relatively vulnerable

³⁴ Craton, *Invisible Man*, 73, 197–200, gives details of severe mortality among more than 200 slaves bought for Worthy Park in 1792–3.

³⁵ Sheridan, *Doctors and Slaves*, 125, 187; Sheridan, 'Slave Demography', 266; Long, *Jamaica*, ii. 431–40.

³⁶ Among 18th-century estate records listings of slaves are more numerous than comprehensive accounts of mortality.

TABLE 9. *Slave Population Structure on Jamaican Sugar Estates, 1750-1829 (%)*

Age group	1750-1807				1817-29			
	Africans		Creoles		Africans		Creoles	
	Males	Females	Males	Females	Males	Females	Males	Females
0-4			3	4			5	5
5-9			2	3			5	5
10-19	8	6	4	5			8	8
20-9	13	10	2	3	1	1	6	7
30-9	7	6	2	2	5	4	5	5
40-9	4	4	1	2	4	4	3	3
50+	3	4	1	1	4	5	3	3
TOTAL	35	30	15	20	14	14	35	36

Sources: 1750-1807: plantation listings detailed in the Appendix; 1817-29: demographic statistics of twelve Jamaican sugar estates in Report from the Select Committee . . . upon . . . the Extinction of Slavery, *Parl. Papers* 1831-2, xx (721), 576-7.

Africans after the ending of the slave-trade would tend to lower mortality, but much of this effect was offset by the growing number of creole infants and older slaves, both African and creole.³⁷ If the likely demographic consequences of seasoning mortality and creolization can be limited in these ways, there must be a strong presumption that at least part of the movement of British West Indian slave populations towards natural increase was the effect of underlying changes in vital rates. We shall now pursue this possibility further, beginning with the evidence concerning trends in age-specific mortality.

MORTALITY

For reasons that have already been discussed, estate records of deaths and births are likely to have been quite complete and

³⁷ For the comparison of mortality levels by this method of indirect standardization see R. Pressat, *Statistical Demography* (1978), 152-4. When taking account of seasoning losses it has been assumed that in Jamaica during the later 18th century 12% of the slave population comprised Africans aged 10-19, going through their first 3 years on the island, and subject to an average annual mortality of 65. It is in principle possible that even without any fall in death rates, the reduction of depletion rates could have been achieved by a substantial rise in birth rates. However, it will be shown that this is not likely to have occurred.

accurate in most respects. But the one serious weakness common to nearly all surviving accounts is that they take insufficient notice of infants who were born and then died between two successive returns, in most cases made annually to individual planters and triennially to the official registrars. Contemporaries nevertheless agreed that infant mortality was severe, especially during the first few days of life, and in recognition of the children's poor chances of survival, most were only named and entered in plantation records when they had survived nine days from birth.³⁸ Also managers must often have been tempted to save themselves clerical work, and the risk of awkward questions about the quality of their supervision, by failing to report the birth of other young infants who died after this period.

Few documents have come to light which apparently depart from common practice by admitting mortality in earliest infancy, including still births, and of these only Thistlewood's diaries relate to the mid-eighteenth century. Among the slaves under his supervision between the 1750s and 1780s, recorded infant mortality—the death rate during the first year of life—was 422 per thousand, while it was reported at 269 on York plantation, Jamaica, between 1778 and 1783, at 352 on the Barham estates, also in Jamaica, during the 1780s and 1790s, at 345 between 1817 and 1821 on some estates in St Vincent and St Kitts examined by Higman, and at 291 between 1817 and 1828 on Lord Romney's plantation in St Kitts. According to these sources, during the eighteenth century roughly 80 per cent of infant mortality occurred within the first nine days or fortnight of life, while in the nineteenth century 50 per cent did so.³⁹ This material is probably sufficient to indicate general orders of magnitude, and it matches contemporary reports. According to Long, writing of Jamaica in 1788, '... Tetanus, destroys (in general) One Third of all the young children, that are born here'. At the turn of the century Robert Renny put this proportion at a

³⁸ Higman, *Jamaica*, 47-9; Higman, *Slave Populations*, 26-7; Craton, *Invisible Man*, 86-7, 100, 121.

³⁹ Monson MSS, Thistlewood Diaries; Gale-Morant MSS, 3/c, stock accounts 1778-83; Clarendon MSS, Dep. b 36, Mesopotamia plantation stock accounts 1790, 1795-6, Island plantation stock accounts 1780, 1785, 1790-3; Higman, *Slave Populations*, 28-9; Romney MSS, A 144, stock accounts 1817-28.

quarter, while Dr George Farquhar, also with Jamaican experience, alleged that 'one-half of those born in the course of the year, are not unfrequently carried off . . .'.⁴⁰

Clearly infant deaths were a most serious impediment to natural increase, but is it possible to make any more precise judgements, in particular about tendencies over time? As it happens, the rate of loss noticed by Thistlewood was rather higher than in the later accounts, although this limited body of evidence cannot carry much weight. Another possible guide to trends in infant mortality is provided by the sex ratio of surviving children. In human populations males usually outnumber females among the newly born, roughly in the ratio of 103-6:100, while males, especially male infants, are subject to relatively high rates of mortality. So it is likely that heavy infant mortality would result in a rather small proportion of males among young children. For the same reasons a decline in infant mortality could be expected to raise that proportion, unless there was some countervailing increase in the male mortality differential. Slave listings suggest that there may have been an increase in the share of males among young children in the West Indies between the eighteenth and nineteenth centuries, and as there is no evidence for any systematic change in the male mortality differential over the same period the most probable cause is a fall in infant mortality, confirming the impression given by the Thistlewood, York, Barham, Higman, and Romney data.⁴¹ It will therefore be assumed that slave infant mortality averaged 420 in the eighteenth century and 320 in the nineteenth century; also that 35 per cent of births were omitted from demographic records compiled in the conventional way during the first period, and 25 per cent in the second.⁴² Probably slave infant mortality is not a subject on which exact knowledge will ever be achieved, and the limited basis for these conjectures should be borne in mind.

Information about age-specific mortality on the original

⁴⁰ Craton, Walvin, and Wright, *Slavery*, 102; Sheridan, *Doctors and Slaves*, 201.

⁴¹ Roberts, *Jamaica*, 74-5. Among children aged 0-4 years recorded by the 18th-century slave listings detailed in the Appendix, males are outnumbered by females in the ratio of 70:100. In the 19th-century registration returns this ratio averages about 95:100 (Higman, *Slave Populations*, 524).

⁴² Higman, *Slave Populations*, 30-2, makes similar estimates of the extent of early 19th-century under-registration through the use of model life tables.

British West Indian sugar islands is summarized in Tables 10 and 11. For the eighteenth century three estates—Parham, York, and Egypt—have been found where returns of deaths are associated with evidence of the ages and origins (African or creole) of the individuals at risk, and these properties seem to have been quite representative of contemporary conditions. Parham and York had depletion rates of between 15 and 20, similar to those found elsewhere; Egypt's rate of loss was only 5, but the population here was unusually youthful.⁴³ For early nineteenth-century Jamaica it is best to take as our standard of comparison the material published at the time relating to a sample of twelve sugar estates on that island, because all our information from the preceding period concerns sugar plantations.⁴⁴ The returns for the eight Jamaican parishes include large numbers of slaves employed in less arduous work, for example on cattle pens or coffee estates, with lower rates of mortality.⁴⁵ St Kitts and the parish of St John in Barbados were almost complete sugar monocultures.

From these data it seems that the recorded age-specific mortality of slaves employed by sugar estates in the old colonies fell on average by about 40 per cent among Africans and 35 per cent among Creoles over the period of amelioration.⁴⁶ The largest reduction occurred among the youngest Africans, reflecting the elimination of seasoning losses.⁴⁷ Seasoned Africans were always subject to rates of mortality some 50 per cent higher than those affecting Creoles of similar age: both groups experienced

⁴³ Tudway MSS, Box 15, Letter Book from Antigua 1759–84, F. Farley to C. Tudway, 10 Oct. 1766. Eighty-five per cent of Egypt's population was aged between 15 and 45; 44% of the slaves in this age group were female. For a more typical population structure see Table 9.

⁴⁴ The material for the 12 sample estates runs from 1817 to 1829, and during this period their depletion rate averaged 4.7, close to the local average for sugar plantations: Craton, 'Jamaican Slave Mortality', pp. 10–14. Between 1829 and 1832 Jamaican sugar estates suffered much higher rates of loss (12.4 per annum on absentee-owned properties) but this deterioration was reversed after 1832: Higman, *Jamaica*, 61–2, 123; and see below, endnote 5.

⁴⁵ Higman, *Jamaica*, 16, 123.

⁴⁶ In making these estimates the representative 18th-century Jamaican age distribution (Table 9) has been taken as the standard. For the method of direct standardization in the comparison of mortality levels see Pressat, *Statistical Demography*, 48–52.

⁴⁷ At both Egypt and York nearly all of the Africans aged 10–19 were recent deliveries in the process of seasoning. Egypt's proprietor made heavy purchases of new negroes in the later 1750s, and at York some large batches, equal to 15% of the estate's population, arrived in 1776–7, just before the detailed returns of mortality begin.

TABLE 10. *Recorded Age-specific Slave Mortality Rates in the Old Colonies: Africans, 1754-1829 (Deaths per 1,000)*

Age group	Egypt, Jamaica 1754-84 (854) ^a		Thistlewood, Jamaica 1754-86 (477) ^a		York, Jamaica 1776-83 (1,161) ^a		8 Jamaican parishes 1817-20 (115,000) ^a		12 Jamaican sugar estates 1817-29 (16,932) ^a	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
10-19	83	51	21	0	22	143	7	2		
20-9	39	13	48	0	25	50	13	14	23	20
30-9	28	50	16	0	30	32	20	18	26	24
40-9	61	111	0	0	37	87	33	25	40	28
50+					135	59	63	51	88	65
10+	47	36	28	0	33	68	30	27	48	39

^a Number of slave years.

Sources: See Table 11.

TABLE 11. *Recorded Age-specific Slave Mortality Rates in the Old Colonies: Creoles, 1737-1829 (Deaths per 1,000)*^a

Age group	Parham, Antigua 1737-1803 ^b (3,550) ^d		Egypt, Jamaica 1754-67 (225) ^d		Thistlewood, Jamaica 1754-86 (168) ^d		York, Jamaica 1778-83 (1,386) ^d
	Males	Females	Males	Females	Males	Females	Males
0-4	[0]	[0]	522	220	353	145	109
5-9	31	40	0	0	214	29	65
10-19	24	42	0	0	0	53	23
20-9	27	21					15
30-9	44	25					41
40-9	57	38					29
50+	118	80					0
All ages	[51]	[49]	176	57	283	96	43

^a Figures in square brackets are affected by the substantial under-recording of infant mortality.

^b The subsequent mortality of 169 creole slaves listed in 1737.

^c St James, Manchester, Clarendon, Vere, St John, Port Royal, Portland, Kingston.

^d Number of slave years.

Sources: Parham: Tudway MSS, Boxes 14, 16, listings 1737, 1750-2, Box 9, stock accounts 1776-1803. For 1738-49 and 1752-76 mortality has been estimated by interpolation; Egypt, Thistlewood: Monson MSS, Thistlewood Diaries; York: Gale-Morant MSS, 3/c, stock accounts; 8 Jamaican parishes: Higman, *Jamaica*, 260-7; 12 Jamaican sugar estates: Report from the Select Committee . . . upon . . . the Extinction of Slavery, *Parl. Papers* 1831-2, xx (721), 576-7; St John parish, Barbados: Higman, *Slave Populations*, 474, 658; St Kitts: Higman, *Slave Populations*, 462, 654.

8 Jamaican parishes ^c 1817-20 (198,000) ^d		12 Jamaican sugar estates 1817-29 (42,651) ^d		St John parish, Barbados 1817-20 (15,762) ^d		St Kitts 1817-22 (84,385) ^d		
Females	Males	Females	Males	Females	Males	Females	Males	Females
130	[37]	[31]	[57]	[62]	[48]	[51]	[76]	[74]
31	13	14	28	23	15	8	14	14
28	10	9	14	14	7	8	12	11
15	12	12	17	14	19	11	14	14
19	19	18	18	18	27	13	27	20
37	36	19	21	14	34	28	36	25
85	51	41	56	52	72	55	54	52
45	[20]	[18]	[28]	[25]	[26]	[23]	[29]	[28]

similar long-term improvement. There was also an unusually large fall in the mortality of Creoles aged between 5 and 19 although, on the evidence of our earlier discussion of infant mortality, the chances of survival through the first days of life may not have increased to the same extent. In the early nineteenth century male mortality was usually higher than that of females, especially among infants, young children, and the oldest slaves, but eighteenth-century information is less consistent on this point: the Parham and Egypt/Thistlewood material conforms in general to the nineteenth-century pattern, but York is notable for the relatively high mortality of its females, both African and creole.

No adequate records have been found from which to assess age-specific mortality in the new colonies before the start of slave registration. Higman has used the early registration returns to calculate mortality rates on St Lucia, St Vincent, Grenada, and Tobago, considerably exceeding those current on Jamaica at about the same time. However, the period to which most of his estimates relate, between 1817 and the early 1820s, was marked by exceptionally unfavourable demographic conditions in the Ceded Islands as the result of a sequence of drought and hurricanes. Thus among Grenada's slaves from 1817 to 1819 the recorded crude death rate averaged 38 and the depletion rate 19, compared with a death rate of 33 and a depletion rate of 6 over the years 1817-33. For these recently acquired territories the experience of St Andrew parish, Grenada, and the sugar estates of Demerara/Essequibo 1829-32 seems more representative (Table 12).⁴⁸ It suggests that on even the most productive new plantations creole mortality had fallen to levels not much higher than those current elsewhere in the British West Indies.

FERTILITY

Birth rates, like death rates, were affected by a variety of influences. When the slave-trade was in full spate it brought in so

⁴⁸ Higman, *Slave Populations*, 414-15, 610-11, 655-70, 701. St Andrew parish, Grenada, was mainly devoted to sugar planting. For the difficult weather conditions on Grenada in the period 1816-19 and their implications for the slaves' well-being see Home of Wedderburn MSS, GD 267 5/7, 5/40, letters from J. Fairbairn to G. Home.

TABLE 12. *Recorded Age-specific Slave Mortality Rates in the New Colonies: Creoles, 1829-1832 (Deaths per 1,000)^a*

Age group	St Andrew parish, Grenada 1829-32 (11,871) ^b Males and females	Demerara/Essequibo sugar estates 1829-32 (65,484) ^b Males and females
0-4	[90]	} [45]
5-9	12	
10-19	12	14
20-9	17	17
30-9	25	33
40-9	34	39
50+	70	56
All ages	[32]	[28]

^a Figures in square brackets are affected by the substantial under-recording of infant mortality. However, the registration returns for Grenada were made annually, and so probably give more complete coverage than in most of the other colonies.

^b Number of slave years.

Sources: St Andrew parish, Grenada: Higman, *Slave Populations*, 497-8, 660. Demerara/Essequibo: Returns of the Population of the Different Slave Colonies . . ., *Parl. Papers* 1833, xxvi (700). The original data do not distinguish Africans from Creoles. Creole age-specific mortality has been estimated on the assumptions that it was exceeded by African mortality in the ratio of 100:140, and that the percentages of Africans among the populations were as follows: St Andrew parish, Grenada: ages 0-30, nil; 30-9, 11%; 40-9, 36%; 50+, 54%; Demerara/Essequibo: 0-30, nil; 30-9, 40%; 40+, 90%. For evidence in support of these assumptions see the sources cited for Table 11; Higman, *Slave Populations*, 123, 497-8, 654-6; *Parl. Papers* 1833, xxvi (700). It has also been assumed that the age structure of slaves on Demerara/Essequibo sugar estates corresponded to that of the colony as a whole.

many young adults that estates could have quite high proportions of women at child-bearing age, even though males outnumbered females in the cargoes from Africa. However, African women were less fertile than Creoles.⁴⁹ Table 13 provides some indications of fertility. Among these all birth rates and fertility rates except for the Egypt, Thistlewood, and Romney slaves are likely to be considerably understated because of the omission of infant deaths. If incompletely recorded infant mortality declined

⁴⁹ See below, Table 20; Higman, *Jamaica*, 117; Craton, 'Hobbesian or Panglossian', 334.

TABLE 13. *Indicators of Slave Fertility, 1737-1834^a*

Estate or island	Recorded crude birth rate	Women aged 15-44 as % of total population	% Creoles among women aged 15-44	Fertility rate (births per 1,000 women aged 15-44)	Ratio of children aged 0-4 to women aged 15-44
<i>Barbados</i>					
(1) Codrington 1743-8	[17]	19		[89]	
(2) Codrington 1773-92	[26]				
(3) Barbados 1817-34	[38]	25	89	[152]	0.60
<i>Leeward Islands</i>					
(4) Parham, Antigua 1737		27	96		0.43
(5) Stapleton, Nevis 1778		29			0.34
(6) Parham 1776-1803	[27]	30		[90]	
(7) Romney, St Kitts 1818-30	31	27	93	117	0.40
(8) Leeward Islands 1817-34	[25]	24	82	[102]	0.49

Jamaica

(9) Egypt 1754-67	34	44	79	0.21
(10) Thistlewood 1758-86	60	44	149	0.45
(11) York 1777-92	[26]	24	[108]	0.38
(12) Frontier 1788		27		0.29
(13) Mesopotamia 1799-1818	[19]	25	[77]	
(14) Perrins 1803-20	[29]	29	[100]	0.34
(15) 12 estates 1817-29	[26]	25	[104]	0.44
(16) Jamaica 1817-32	[23]	26	[88]	0.40

New colonies

(17) Waltham, Grenada 1794-8	[29]	25	[116]	0.42
(18) Ceded Islands 1817-33	[25]	26	[97]	0.38
(19) Trinidad 1813-34	[20]	28		0.40
(20) Demerara/Essequibo 1817-32	[21]			
(21) Berbice 1819-31	[25]	25	[99]	0.44

* Figures in square brackets are affected by the substantial under-recording of births.

Sources: (1), (2): Bennett, *Bondsman and Bishops*, 54-5, 73, 96; (3), (8), (16), (18)-(21): Higman, *Slave Populations*, 31-2, 308, 356, 413-14, 462-4, 605-6; (4), (6): Tudway MSS, Boxes 9, 14, 16, slave listings 1737, 1750, stock accounts 1776-1803; (5): Stapleton-Cotton MSS, Bundle 16, slave listings; (7): Romney MSS, A 144, stock accounts; (9)-(10): Monson MSS, Thistlewood Diaries; (11): Gale-Morant MSS, 3/c, stock accounts; (12): Stirling of Keir MSS, T-SK 15/38, slave listing; (13): Dunn, 'Two Plantations', 41, 45; (14): Fitzherbert MSS, W1/20, stock accounts; (15): *Parl. Papers* 1831-2, xx (721), 576-7; (17): Home of Wedderburn MSS, GD 267 5/17.

over time—and we have already seen that it possibly did so—then the recorded birth rate may have risen although the ‘true’ rate remained unchanged. Furthermore, a reduction in infant mortality could be expected to increase the ratio of young children to fertile-age women. Finally, the Thistlewood material for the period after 1767 relates to a property on which sugar was not being produced, and where the work regime was more relaxed than usual. Bearing all these points in mind it seems that only in Barbados was there any clear increase in fertility on sugar estates, except through the displacement by Creoles of the relatively barren Africans. Over the registration period from 1817 a slight improvement in the recorded crude birth rate can also be detected on some of the Leeward and Ceded Islands,⁵⁰ but in Jamaica—by far the most important slave colony—the main indicators remain more or less unchanged.

THE STATISTICS OF DEMOGRAPHIC CHANGE:
A SUMMARY

To recapitulate, in the original British sugar colonies depletion rates averaged about 20 from the 1750s to the 1770s, and had probably been higher than this earlier in the century. After the American War of Independence they fell everywhere, but the pattern of change varied between the different islands. Barbados and the Leeward Islands achieved steady improvement from the 1780s, with Barbados taking the lead, while in Jamaica and the new colonies the main advance was delayed until after the ending of the slave-trade in 1808, and these territories’ slaves never reached the point of natural increase. Except in Barbados virtually all of the decline in depletion rates occurred through reduced mortality rather than increased fertility. The curtailment of slave imports made a useful contribution, in so far as it caused Africans to be succeeded by Creoles with lower age-specific mortality and higher fertility. On the other hand there was a long-term reduction in the proportion of women of child-bearing age among slave populations, and an increase in the numbers of young children and the aged, subject to above-average rates of mortality. The elimination of the seasoning

⁵⁰ Higman, *Slave Populations*, 308.

losses suffered by recently imported Africans accounted for between a quarter and a third of the reduction in death rates,⁵¹ the rest of which was mainly due to a fall of about 35 per cent in standardized mortality among both Creoles and seasoned Africans.

Before we seek explanations for these developments it may be useful to set British West Indian demographic patterns under slavery alongside the course that they took after emancipation (Tables 14, 15, 16, and 17). During the later nineteenth century imported Africans became an insignificant element of population, so it is the Creoles' experience which should be compared. Also, quite comprehensive procedures for vital registration were established in the British West Indies, without the large-scale under-recording that affected most demographic returns in the period of slavery.⁵² British West Indian demography did not follow any single course. On Barbados both death rates and birth rates seem to have fallen, perhaps at least partly because this colony's relatively numerous white population was included for the first time in the statistics for the later period. On the Leewards birth rates rose, but except on Montserrat there was no significant fall in death rates, while on Jamaica and the Ceded Islands there were increases in birth rates and reductions in death rates. The reduction in the Jamaican death rate must have occurred mainly through the further decline in the numbers of imported Africans, and through the improving chances of survival for infants and children. Age-specific mortality rates among older Creoles show very little change here.

INFLUENCES ON MORTALITY

It is evident that slave mortality fell over the long term, but not necessarily as a result of better material conditions. Perhaps the main influence came from epidemiology, in particular through the link between Africa and the Caribbean. Certain diseases may have become less virulent, with the progressive acquisition of immunities, the declining significance of the slave-trade, and the

⁵¹ On the assumptions detailed in ch. 5 n. 37.

⁵² Roberts, *Jamaica*, 22-8.

less virulent
immunities

TABLE 14. *Death Rates in the British West Indies, 1815-1883 (Deaths per 1,000)*^a

	Barbados	St Kitts	Nevis	Antigua	Montserrat	Jamaica	Windward Islands ^b
(1) Recorded crude death rate (slaves) 1815/19-1831/4	[28]	[28]	[24]	[24]	[28]	[26]	[34]
(2) Adjusted crude death rate (slaves) 1815/19-1831/4	43	37	34	34	35	32	39
(3) Recorded crude death rate (whole population) 1879-83	26	36	32	38	22	24	26

^a Figures in square brackets are affected by the substantial under-recording of infant mortality.^b Grenada, St Lucia, St Vincent, Tobago.

Sources: See Table 15.

TABLE 15. *Jamaican Age-specific Mortality Rates, 1817-1881*
(Deaths per 1,000)^a

Age group	0-4	5-9	10-19	20-9	30-9	40-9	50-9	60-9	70+	All ages
(4) Creole slaves in 8 Jamaican parishes 1817-20	[34]	13	10	12	18	26	35	50	86	[19]
(5) Creole slaves on 12 Jamaican sugar estates 1817-29	[54]	25	14	15	18	18	—	53	—	[26]
(6) Jamaica (whole population) 1881	64	9	6	11	16	22	34	55	93	23

^a Figures in square brackets are affected by the substantial under-recording of infant mortality.

Sources: (1)-(2): Higman, *Slave Populations*, 35, 308-11; (3): Statistical Tables relating to the Colonial and other Possessions of the United Kingdom 1879-84, *Parl. Papers* 1884-5, lxxxiii (c. 4519), 1888, cv (c. 5508); Roberts, *Jamaica*, 185; (4)-(5): as for Table 11; (6): Roberts, *Jamaica*, 187, 198.

stabilization of estate populations.⁵³ In fact, during the period immediately before emancipation sharp island-wide upswings in the number of deaths, possible results of the sudden spread of infection, were not very common. However, this was also true of the eighteenth century, when high average losses, year after year, took a heavier toll than the occasional instances of epidemic or 'crisis' mortality.⁵⁴ It may therefore be more useful to consider the principal causes of death reported in plantation returns, remembering that in the state of contemporary medical knowledge designations cannot have been very exact or consistent (Table 18).

There are few obvious long-term changes, at least none which

⁵³ Biological factors are emphasized by Craton, *Invisible Man*, 119-33, and P. D. Curtin, 'Epidemiology and the Slave Trade', *Political Science Quarterly*, lxxxiii (1968), 190-216. However, the evidence used by Curtin concerning the mortality of black soldiers in the West Indies is unsatisfactory as a guide to the experience of recently imported plantation slaves. The soldiers were subject to conditions unlike those of the estates, with probably rather better feeding and less severe labour, but more frequent changes in location. Such circumstances would be likely to make infectious diseases relatively more important as a cause of death.

⁵⁴ Higman, 'Slavery and the Development of Demographic Theory', 185-6; Sheridan, 'Slave Demography', 277-81; Clarendon MSS, Dep. b 37, 'Mesopotamia Returns 1751 to 1777'.

TABLE 16. *Birth Rates in the British West Indies, 1815-1883 (Births per 1,000)*^a

	Barbados	St Kitts	Nevis	Antigua	Montserrat	Jamaica	Windward Islands ^b
(1) Recorded crude birth rate (slaves) 1815/19-1831/4	[38]	[28]	[24]	[22]	[29]	[23]	[25]
(2) Adjusted crude birth rate (slaves) 1815/19-1831/4	54	40	37	33	34	28	32
(3) Recorded crude birth rate (whole population) 1879-83	42	44	49	43	46	37	44

^a Figures in square brackets are affected by the substantial under-recording of births.^b Grenada, St Lucia, St Vincent, Tobago.

Sources: See Table 17.

TABLE 17. *Ratios of Children Aged 0-4 to Women Aged 15-44 in the British West Indies, 1817-1891*

	Barbados	St Kitts	Nevis	Antigua	Montserrat	Jamaica	Windward Islands ^a
(4) 1817 1831/2	0.60	0.47	0.47	0.39 0.48	0.63	0.40	0.39
(5) 1844		0.57	0.62	0.49	0.64	0.59	
(6) 1891	0.51	0.55		0.45		0.51	0.67 ^b

^a Grenada, St Lucia, St Vincent, Tobago.^b Excluding Tobago.

Sources: (1)-(2): Higman, *Slave Populations*, 32-3, 308-11; (3): *Parl Papers* 1884-5, lxxxiii (c. 4519), 1888, cv (c. 5508); Roberts, *Jamaica*, 272; (4): Higman, *Slave Populations*, 356; (5): Census of the Population taken in Each of the British West Indian Islands and in British Guiana, *Parl Papers* 1845, xxxi (329); Tekse, *Jamaica*, 16-23; (6): J. Byrne, *Levels of Fertility in the Commonwealth Caribbean 1921-1965* (Kingston, Jamaica, 1972), 36, 55.

TABLE 18. *Causes of Slave Deaths, 1751-1832 (%)*

	Mesopotamia, Parham, Jamaica 1751-1789	Antigua 1776-1783	York, Jamaica 1778-1783 ^a	Mesopotamia, Parham, Jamaica 1790-1819	Antigua 1783-1803	Newton, Barbados 1796-1801, 1811-1825	Romney, St Kitts 1798-1828 ^a	Various Jamaican estates 1817-1829	St Andrew parish, Grenada 1830-1832	Demerara/ Essequibo 1829-1832
Invalid, old age	17.6	10.7	15.1	16.7	30.0	14.1	21.8	14.7	21.5	19.1
Dysentery, diarrhoea ^b	15.6	33.5	—	2.9	1.4	7.1	3.2	5.1	6.4	12.0
Fever	11.1	9.4	2.7	5.9	17.8	4.1	3.2	7.6	6.2	8.1
Dropsy	6.9	5.4	8.3	8.8	6.6	8.2	5.7	9.3	7.8	9.2
Consumption	5.0	10.0	9.7	8.2	9.4	8.2	3.9	5.7	3.1	7.4
Yaws	3.4	0.8	2.7	—	—	—	0.7	2.6	0.4	2.6
Pleurisy, influenza	3.1	—	8.3	6.2	1.4	—	3.6	4.8	8.4	2.2
Smallpox	1.9	2.0	6.8	1.0	0.5	—	0.7	—	—	—

Dirt-eating ^a	1.5	—	9.7	3.3	—	0.5	7.1	2.9	12.5	4.3
Cocobay,										
leprosy	1.5	—	—	0.7	—	6.5	5.7	1.7	1.2	3.8
Lockjaw,										
jawfalling	1.1	—	13.7	1.3	—	0.5	5.8	1.7	1.4	2.6
Worms	1.1	4.7	4.1	1.0	3.3	2.3	1.4	1.9	1.4	2.3
Others, not stated	30.2	23.5	18.9	44.0	29.6	48.5	37.2	42.0	29.7	26.4
Number of deaths	224	142	73	306	213	169	278	1,334	576	7,016

^a Infant mortality was recorded more fully than usual at York and Romney

^b Including 'flux' and 'purging'.

^c Including *mal d'estomach* and cachexy.

Sources: Mesopotamia: Clarendon MSS, Dep. b 36, stock accounts; Parham: Tudway MSS, Box 9, stock accounts; York: Gale-Morant MSS, 3/c, stock accounts; Newton: Handler, Lange, and Riordan, *Plantation Slavery in Barbados*, 99; Romney: Romney MSS, A 139, 144, stock accounts; various Jamaican estates; Hignan, *Jamaica*, 112-14, Fitzherbert MSS, W1/20, stock accounts of Perrins plantation 1803-20, Westmoreland sugar estates, PRO, T. 71/181, slave registration returns; St Andrew parish, Grenada: Hignan, *Slave Populations*, 675; Demerara/Essequibo: Hignan, *Slave Populations*, 340.

must have been determined by the African connection, either through the vulnerability of newcomers in the Caribbean to an unfamiliar disease environment, or through the effects of recently delivered cargoes on already settled colonial populations. Yaws and smallpox were the diseases that contemporaries most commonly associated with the slave-trade, and neither of these infections was a principal cause of death.⁵⁵ Dysentery and diarrhoea, the one category showing a marked reduction, were in no way specific to the imported African. They could wreak havoc on the Guinea ships and among new contingents on the estates, as at Worthy Park in the 1790s, but they also struck Mesopotamia in the 1750s and 1760s when slave purchases were modest and irregular, or the mainly creole gangs of Parham while the slave-trade was curtailed during the American War of Independence. A Jamaican proprietor, corresponding with his attorney, indicated the disorders to which the different groups of slaves seemed most subject: 'I am glad you have lost none of the Old Negroes by the Dysentery nor any of the new ones by Sores, occasioned by the very wet seasons you have had'. After 1808 bowel complaints continued for some time as the most important single cause of death in the Ceded Islands, although their effects here had been much reduced by the early 1830s.⁵⁶

Planters and their medical advisers were clear that the primary cause of dysentery, diarrhoea, 'fluxes', or 'purgings'—the terms could be used interchangeably for amoebic or bacillary dysentery or simple diarrhoea—was inadequate feeding, especially at times of scarcity in the late summer and early autumn when the slaves were forced to eat unripe fruit or vegetables. Heavy rainfall may also have made an independent contribution to the season's dangers.⁵⁷ On Barbados, Indian corn

⁵⁵ Long, *Jamaica*, ii, 432–4; Craton, Walvin, and Wright, *Slavery*, 102; Sheridan, *Doctors and Slaves*, 88, 250–2.

⁵⁶ Sheridan, *Doctors and Slaves*, 116–17, 208–9; Roberts, *Jamaica*, 173; Higman, *Slave Populations*, 339–41; Clarendon MSS, Dep. b 37, 'Mesopotamia Returns 1751 to 1777'; Vassall MSS, W. Vassall to J. Wedderburn, 13 Nov. 1771; Tudway MSS, Box 9, stock accounts 1776–1803. The importance of diarrhoea or dysentery as causes of death at Parham 1776–83 was inflated by the period of exceptional hardship in 1779–80 when the death rate reached 100. But even excluding this episode, 'purgings' and 'fluxes' accounted for a fifth of mortality during the period 1776–83, a much greater proportion than later.

⁵⁷ Sheridan, *Doctors and Slaves*, 23–4, 31, 35, 191, 207–10; Higman, *Slave Populations*, 347; Dirks, 'Resource Fluctuations', 144; Grainger, *Essay*, 26, 33.

when new, or before it is full ripe, and either boiled or roasted in the Ear, is very much covetted by all ranks and is, for what reason I cannot find, called Mutton Corn. The taste is exceedingly agreeable; though very apt to occasion a Flux, especially if it is eaten without discretion.⁵⁸

The appearance of dysentery among the [Jamaican] slaves is most to be apprehended in August, when the new yams are begun to be got in, and the avagata pear (a favourite article in the meals of the negroes) still remains too green for use, but which they will yet eat. This is a contagious disease, and frequently very fatal.⁵⁹

Consequently planters sometimes ordered that any avocado trees growing on their estates should be cut down.

However, dysentery and diarrhoea remained a major hazard in Berbice and Demerara/Essequibo, even though their feeding standards were relatively generous. A special problem here was the impurity of water supplies, drawn from the estates' drainage trenches. Thus in Berbice, unlike the island colonies, deaths from diarrhoea and many other causes occurred at a fairly uniform rate through the year, without a pronounced late summer peak. In addition, by the eve of emancipation Berbice and Demerara/Essequibo had an unusually large proportion of middle-aged slaves, among whom diarrhoea was particularly common.⁶⁰

Monthly variations in the number of deaths confirm the significance of seasonal dietary changes on the older sugar colonies for the period from the 1750s to the 1780s (Fig. 7), and they show also how later the annual cycle in mortality was attenuated, to leave only slight traces of the original pattern by the early nineteenth century (Fig. 8). As food crises became less severe, more attention was given to the dangers that prevailed at the turn of the year. From October to March the Caribbean is subject to cold winds from North America, which in the interior of the larger islands can bring overnight temperatures below 50 °F, nearly 30° less than the daily average.⁶¹ Slaves during the winter months were likely to suffer 'little fevers or colds or pains

⁵⁸ Senhouse MSS, Memoirs of Joseph Senhouse, vol. ii, fo. 287, 21 Aug. 1778.

⁵⁹ J. Stewart, *A View of the Past and Present State of the Island of Jamaica* (Edinburgh, 1823), 306.

⁶⁰ Higman, *Slave Populations*, 340, 345, 670-3; Gladstone MSS, CH 23, W. Johnstone to R. Gladstone, 5 Jan. 1829.

⁶¹ United States Department of Commerce, *Climate of the States: The West Indian Islands (including Puerto Rico)* (Washington, DC, 1941).

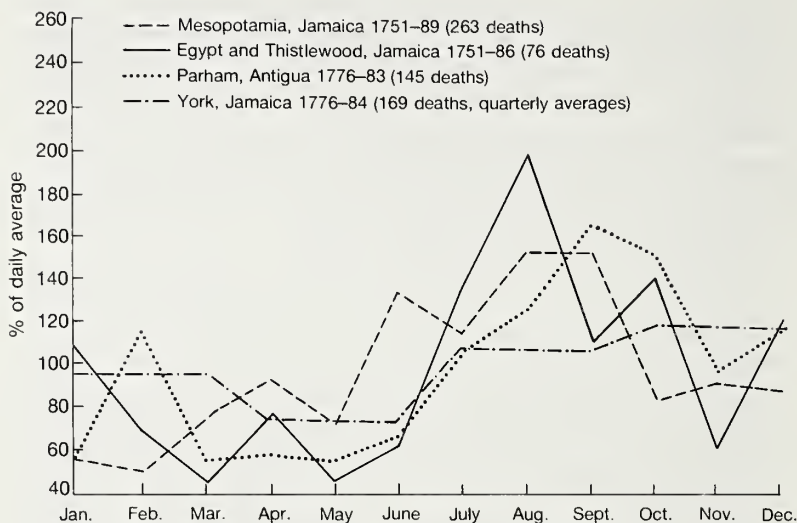


FIG. 7. Seasonality of Slave Deaths, 1751-1789

Sources: See Fig. 8.

in their head or limbs', and more serious outbreaks of influenza or pleurisy, disorders which came to account for a greater proportion of deaths.⁶² Moralists deplored the way in which the slaves put themselves at risk through their social habits. John Williamson, an experienced estate doctor, considered that the Jamaican influenza outbreak in 1807-8 had been able to gather momentum under cover of the Christmas 'debauchery':

Excessive drinking; sudden transitions from heat to cold, after the indulgence of their violent passions; want of rest; night travelling in libidinous and jealous pursuits, in the gratification of visits to their numerous wives, are such manifested sources of aggravated disease, that it is unnecessary to dwell on them longer.⁶³

He might also have mentioned the effects of shift changes at harvest time from the heat of the boiling house to the night air.

⁶² Lewis, *Journal*, 277, 13 Feb. 1817.

⁶³ J. Williamson, *Medical and Miscellaneous Observations, relative to the West India Islands* (2 vols., Edinburgh, 1817), ii. 112-13, 130-1.

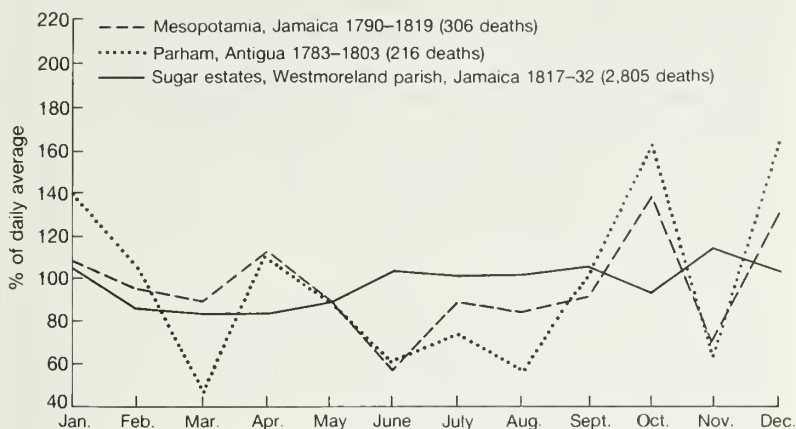


FIG. 8. Seasonality of Slave Deaths, 1783–1832

Sources: Mesopotamia: Clarendon MSS, Dep. b 34–6, stock accounts; Egypt and Thistlewood: Monson MSS, Thistlewood Diaries; Parham: Tudway MSS, Box 9, stock accounts; York: Gale-Morant MSS, 3/c, stock accounts; Westmoreland sugar estates: PRO, T. 71/179–87, slave registration returns.

To minimize these hazards, masters were advised to avoid night working out of crop—‘a custom formerly practised’, according to Thomas Roughley⁶⁴—but the demands of the sugar harvest, and the difficulty in controlling the slaves beyond the hours of supervised labour, made extra clothing allowances seem a more useful measure. About the middle of the eighteenth century most planters restricted themselves to a meagre annual distribution of osnaburgh, a coarse linen. In 1760 the manager of Island estate in Jamaica reported that five yards of osnaburgh per slave each year was ‘the customary allowance as I have found it before me’, but renewed an earlier request that this be increased to six yards, with some woollen cloth—‘... flannell or Bays ... which would be a great Preservation for their health’. By 1782 blanketing and caps were being sent out to this property, and approved by the attorney as ‘so very necessary for Negroes settled so very remote in the mountains and subject from its

⁶⁴ Roughley, *Jamaica Planter's Guide*, 101.

situation to heavy rains'.⁶⁵ Thistlewood at Egypt was never allowed to give out woollens or hats, but began to supply blanket-ing to his own slaves in 1780, quite providentially just a few months before the great hurricane of that year.⁶⁶ In the early 1770s Edward Long, although claiming that, apart from the basic clothing allowed to the slaves under the Jamaican code of 1696, '... on every well regulated plantation they are allowed besides a suit of warm woollen cloaths, hats, caps, checks, handkerchiefs etc etc', felt obliged to comment, in his unpleasant way, on the expedients adopted when proper headgear was not available:

Creoles dread rain upon their bare heads almost as much as the native Africans; perhaps, their woolly fleece would absorb it in a large quantity and give them a cold. When they are caught in a shower, it is very common to see them pull off shirt and jacket, and sometimes their breeches or trowsers, all of which they wrap up in a bale, and place upon their heads. They are fond of covering this part of their Body at all times ... twisting one or two handkerchiefs round it as a turban.⁶⁷

In 1777 John Kennion, the attorney of some estates in the parish of Hanover, condemned as quite inadequate their usual allowance for each field labourer of 'only six yards of Osnaburghs for 12 months without hat, knives, needle or blanket'. The items which were lacking should be sent immediately: '... if the negroes are well fed and clothed I will give you my word they shall work, but it is impossible to press upon negroes naked and half starv'd'. He may also have been influenced by the rumours of an imminent slave rebellion that had recently been current in his district.⁶⁸ Within a few years the supplies requested by Kennion as a necessary innovation would be sent out as a matter of routine, even if the planters' claims for their own generosity were rather overdone.⁶⁹ In Scotland about 1817 the bulk order of woollen cloth for a West Indian estate would provide the Mac-

⁶⁵ Clarendon MSS, Dep. b 37, list of Island estate Negroes, 4 July 1759-22 May 1760; Dep. c 357, J. Van Heelen to J. F. Barham, 27 Apr. 1782.

⁶⁶ Monson MSS, Thistlewood Diaries, 9 Aug. 1780.

⁶⁷ Long, *Jamaica*, ii. 412, 490.

⁶⁸ Hall MSS, 1069/3, J. Kennion to T. Hall, 28 Mar. 1777; R. B. Sheridan, 'The Jamaican Slave Insurrection Scare of 1776 and the American Revolution', *Journal of Negro History*, lxi (1976), 290-308.

⁶⁹ In 1788 Jamaicans reported to a parliamentary inquiry that their slaves got 7-20 yards of linen each as well as woollens: F. W. Pitman, 'Slavery on British West India Plantations in the Eighteenth Century', *Journal of Negro History*, xi (1926), 607.

pherson clan with the pattern of its official tartan.⁷⁰ Among the British sugar colonies, Jamaica was most exposed to the cold winds from North America, and the wide dispersal of its estates over an often difficult terrain accentuated the slaves' exposure to severe weather, both at work and play, so here the value of additional clothing was quite obvious. In Barbados, with its more equable climate, dense settlement, and freedom from night work, the planters rather neglected this aspect of amelioration (Table 19).

Other details of mortality remain more obscure. Dirt-eating—often referred to as *mal d'estomach* or *cachexia africana*—received much attention in contemporary publications on slave medicine and has been plausibly interpreted as a result of malnutrition. However, while according to some authors dirt-eating was a principal cause of death, particularly among recently imported Africans and on sugar plantations, it was not usually conspicuous in estate returns (Table 18).⁷¹ Only a few slave listings referred to dirt-eaters, and when they did so the individuals distinguished in this way were only a small minority of the population. Dirt-eating came to be seen as a result of demoralization and harsh treatment, so perhaps reporting managers attempted to conceal its incidence. But even the observant and conscientious Thomas Thistlewood, who treated the practice as a punishable crime, only recorded a few offenders, all of them field labourers, in his private diaries at Egypt.⁷² Probably dirt-eating, although quite common, was rather over-emphasized in published accounts as a peculiar and disgusting habit, offering for the planters and their friends an illustration of 'African' depravity. Dirt-eating was said to have virtually disappeared from the British West Indies after emancipation, but there is no clear evidence that it became any more or less common over the period of slavery.⁷³

⁷⁰ E. J. Hobsbawm and T. Ranger (eds.), *The Invention of Tradition* (Cambridge, 1983), 30.

⁷¹ Kiple, *Caribbean Slave*, 99–103; Sheridan, *Doctors and Slaves*, 216–17; Higman, *Jamaica*, 112–14; Higman, *Slave Populations*, 294–8, 340–3. *Mal d'estomach* was particularly attributed to African men, and dirt-eating to women and children.

⁷² Among the inventories listed in the Appendix, dirt-eaters are specified only for York (4 slaves out of 488 in 1778, 2 slaves out of 448 in 1782), Mount Carmel (7 slaves out of 115), and Grange Hill pen (2 slaves out of 207). However, at York in 1778–9 and 1782–3 10% of the deaths were attributed to dirt-eating. Among the other mortality returns abstracted in Table 18, dirt-eating is conspicuous in those for the Romney plantation, where the records seem unusually explicit and candid. Often dirt-eating on this estate terminated with dropsy, which may have been all that was admitted in such cases elsewhere.

[See p. 154 for n. 73]

TABLE 19. *Annual Clothing Allowances per Slave, 1713-1833*

Estate or owner		Osnaburgh (yards)	Woollens (yards)	Checks (yards)	Hat or cap
<i>Barbados</i>					
(1) Codrington	1713-1803	—	6.25	—	1.0
(2) Turners Hall	1791, 1796	3.5	2.3	—	n.d.
(3) Codrington	1813, 1822	3.5	2.3	1.0	0.5
(4) Newton, Seawells	1818	3.5	2.2	0.9	1.0
(5) Turners Hall	1824	4.0	3.1	—	n.d.
<i>Leeward Islands</i>					
(6) Stapleton-Cotton, Nevis	1780-90	6.3	3.0	—	n.d.
(7) Romney, St Kitts	1794-1802	3.0	4.0	—	0.4
(8) Parham, Antigua	1818	4.5	3.7	—	1.0
(9) Payne, St Kitts	1815-16	4.4	4.7	—	1.0
(10) Romney, St Kitts	1812-33	6.0	5.9	—	0.9
<i>Jamaica</i>					
(11) Egypt	1754-67	4.5	—	—	—
(12) Island	1760	5.0	—	—	—
(13) Fitzherbert	1760, 1773	6.7	3.0	—	0.25
(14) Irwin	1777	6.0	—	—	—
(15) New Found River	1781	6.9	2.0	—	—
(16) Worthy Park	1793	6.7	2.5	0.7	1.8
(17) Pennant estates	1808	7.2	2.8	—	1.2
(18) Pleasant Hill	1812	8.1	5.8	1.0	n.d.
(19) Tharp	1829	7.4	2.1	—	1.0

Sources: (1), (3): Bennett, *Bondsmen and Bishops*, 36-7, 102; (2), (5): Fitzherbert MSS, W1/17, accounts; (4): Newton MSS, 523/806/2, accounts; (6): Stapleton-Cotton MSS, Bundle 23, invoices; (7), (10): Romney MSS, A 162-71, accounts; (8): Tudway MSS, Box 56, factors' report 1822, fo. 12; (9): Payne MSS, BS 1538-41; (11): Monson MSS, Thistlewood Diaries; (12): Clarendon MSS, Dep. b 37, list of negroes, 4 July 1759-22 May 1760; (13): Fitzherbert MSS, W1/3, M. Laing to Mrs Perrin, 22 Mar. 1760, 21 May 1760; W1/10, R. Hilson to W. Perrin, 10 June 1773; (14): Hall MSS, 1069/3, J. Kennion to T. Hall, 28 Mar. 1777; (15): Vassall MSS, W. Vassall to J. Wedderburn, 5 Mar. 1781; (16): Craton, *Invisible Man*, 176-9; (17): Penrhyn MSS, 1329, 1491, invoices; (18): Slebech MSS, 9503, accounts; (19): Tharp MSS, R 55.7.130, accounts.

⁷³ T. Harvey and W. Brewin, *Jamaica in 1866* (1867), 57-8. According to John Imray, 'Observations on the Mal d'estomac or Cachexia Africana, as it takes Place among the Negroes of Dominica', *Edinburgh Medical and Surgical Journal*, lix (1843), 305, dirt-eating, second only to infant tetanus as a cause of death at the time of Bryan Edwards (i.e. in the 18th century), '... for years past, has been gradually disappearing, and at the present moment but few cases are to be met with, at least in this island'. It is not clear to what period he ascribed the improvement. Imray began his practice as a doctor in Dominica in 1832, when cases of *mal d'estomac* or cachexy were still numerous in the registration returns: D. F. Clyde, *Two Centuries of Health Care in Dominica* (New Delhi, 1980), 52; Higman, *Slave Populations*, 340.

Dropsy, much more frequently mentioned in returns of mortality, has also been considered by historians as a deficiency disease—perhaps beriberi—although the term seems to have been used to cover a wide range of complaints involving a bloated or swollen appearance.⁷⁴ Some contemporary observations implied that feeding was especially significant. According to Long, 'dropsies ... generally prove mortal; for this disorder requires a very nutritious diet'. Estate correspondence from Antigua during the 1760s and 1770s laid stress upon 'dropsical cases' when hunger was most acute, and recommended imported beans or biscuit as a means of prevention.⁷⁵ Dropsy was the terminal disease for many dirt-eaters, and characteristic of boiling-house specialists, who may have tried to sustain their hard labour by the consumption of raw sugar. Among workers in the twentieth-century Caribbean 'sugar disease' or 'plantation sickness' has been identified as a form of beriberi or pellagra.⁷⁶ In Jamaica under slavery, however, 'dropsies were also described as a sequel to wet weather, fever, or colds, and as common to both the white and the slave populations', while in the newer colonies they affected skilled, domestic, and town slaves more than field labourers.⁷⁷ On one Barbados estate dropsies accounted for nearly 40 per cent of recorded mortality during the 1740s and only 8 per cent in the 1780s, but, as with dirt-eating, it cannot be established whether in general they became any more or less frequent as time passed (Table 18).⁷⁸

The decline in mortality was probably more limited among infants and young children than among adults, on Jamaican sugar estates at least (Tables 10 and 11), despite recognition of the need to foster a 'rising generation' of Creoles. In the 1750s pregnant women under Thistlewood's supervision were usually expected to work up to the day on which they gave birth, and they were called back to the field again three or four weeks later,

⁷⁴ Kiple, *Caribbean Slave*, 96–9; Sheridan, *Doctors and Slaves*, 210–11; Higman, *Slave Populations*, 341. Beriberi is the result of thiamine deficiency.

⁷⁵ Long, *Jamaica*, ii. 433; Tudway MSS, Box 15, Letter Book from Antigua 1759–84, M. S. Walrond to Charles Tudway, 3 July 1769; Walrond to Clement Tudway, 19 Aug. 1779.

⁷⁶ Dirks, 'Resource Fluctuations', 143–5; Romney MSS, A 144, stock accounts 1817–28; *Journal of a Lady of Quality*, 127–8.

⁷⁷ Fitzherbert MSS, W1/3, M. Laing to Mrs Perrin, 22 Mar. 1760; Stewart, *Island of Jamaica*, 301; Higman, *Slave Populations*, 674–8.

⁷⁸ Bennett, *Bondsmen and Bishops*, 56–7.

whether or not their infant had survived. In the 1760s this relief was increased to about six weeks, both before and after delivery, and the women began to be sent to the owner's principal estate for their confinement.⁷⁹ In 1771 an absentee wrote approvingly of his attorney's 'method of removing the Negroe Wenches to lie in at the Hospital and the keeping the young Infants there to preserve their lives':

I think it will be both humane and prudent to let the Negroe Wenches after their lying in Remain at the Hospital till they have got hearty and strong and not to expose them to take cold by removing them too Soon; and by putting them too early to labour to injure them in their health.⁸⁰

Thistlewood in the 1780s—retired from the stresses of sugar planting—allowed twenty weeks rest for each birth, although he seems to have been unusually generous: six weeks before and afterwards remained the norm in the nineteenth century. By this time, however, breeding women were usually confined to the easier work of the second gang for most of their pregnancy, and allowed time off during the day to nurse their infants. Claims that their attendance in the field was only required so that they would not injure themselves by undertaking heavier tasks on their own account sound too much like special pleading, but William Taylor, an experienced observer and no friend of slavery, reported from Jamaica in the 1830s that mothers of young children were allowed to remain at home for at least an hour or two after the usual morning turn-out.⁸¹ Such privileges would certainly have been unknown to Thistlewood, who hired out his pregnant women at the full rate of pay for field labourers until they were within two or three months of delivery. In many nineteenth-century estate journals no woman with an infant under two years was counted as part of the effective labour force.⁸²

⁷⁹ Monson MSS, Thistlewood Diaries, 23 Feb. 1778.

⁸⁰ Vassall MSS, W. Vassall to J. Wedderburn, 10 June 1771.

⁸¹ Clarendon MSS, Dep. c 359, Bundle 4, W. Ridgard to J. F. Barham, 30 Aug. 1825; Dep. c 375, J. F. Barham's memorandum on his West Indian affairs, c.1820; Sturge and Harvey, *West Indies in 1837*, 86, Appendix, p. xxxix; H. T. de la Beche, *Notes on the Present Condition of the Negroes in Jamaica* (1825), 4, 12; Report from the Select Committee . . . upon . . . the Extinction of Slavery, *Parl. Papers* 1831-2, xx (721), QQ. 389, 399; Higman, *Jamaica*, 206-7.

⁸² Patterson, *Sociology of Slavery*, 60-1; Tudway MSS, Box 14, Parham plantations work

Attempts were also made to improve the care of older children. In Jamaica until the 1780s those who were not obviously in poor health had been set to work collecting grass about the estate from the age of 2 or 3, that is almost immediately after being weaned. Then the usual time for recruitment into the 'hogmeat gang' was postponed to the fifth or sixth year, and by the 1820s any use of children as grass-pickers had fallen into disrepute.⁸³ Roughley strongly condemned those 'gentlemen of the old school' who still employed their youngest slaves in this way, making them go considerable distances through the 'wild bushes and woods', where they were likely to get cuts and bruises that could develop into permanent sores. A few elderly invalids could collect sufficient fodder, especially when Guinea grass pastures had been established. Meanwhile children from 3 to 5 years should be kept in the care of a 'well disposed old woman' as a 'little playful gang about the works'. After passing this stage it was safest to employ them under close supervision, weeding the cane fields and improved pastures.⁸⁴ On the larger estates planters increased the number of gangs into which the labour force was subdivided from the two which had been thought sufficient in the mid-eighteenth century to three or four, with the aim of preventing weaker individuals from being driven too hard.⁸⁵

Another innovation, originally a response to the scarcities associated with the American War of Independence, was the practice of bringing up the children to the overseer's house for a midday meal, to which Roughley would add 'a wine glass of acidulated sugar beverage, and a good taste of rum to each, as an enlivener'. The occasion was supposed to provide an opportunity to observe their state of health, and foster feelings of gratitude or respect.⁸⁶ At times of hardship it might limit the loss of working capacity from the mothers, 'who will otherwise be

journals 1823, 1825-6; PRO, C. 104/178 (Chancery Masters' Exhibits), Les Coteaux plantation, Tobago, work journals 1829-30.

⁸³ Slave listings for Dukenfield Hall 1764, York 1778, Mesopotamia 1783-1832, Bossue 1784, Frontier 1788, Island 1789-1832, Good Hope 1804, Irwin 1821: see Appendix; Higman, *Jamaica*, 198, although Rose Hall had a hogmeat gang aged 4-9 in 1832.

⁸⁴ Roughley, *Jamaica Planter's Guide*, 108; Stewart, *Island of Jamaica*, 231.

⁸⁵ Craton and Walvin, *Jamaican Plantation*, 200; Craton, *Invisible Man*, 139.

⁸⁶ Roughley, *Jamaica Planter's Guide*, 108.

constantly applying for time to look for something for their Children'.⁸⁷ Thistlewood provided for his youngest slaves occasionally from 1777. At the Island estate in 1788 children had been given 'a good wholesome meal every day under the overseer's eye' for several years, although an inspection made two or three times a week replaced this by 1831. At Denbigh the direct feeding of children was instituted in 1814. On the Blue Mountain plantation of Sir Henry Fitzherbert it began in 1828, imitating another of his sugar estates.⁸⁸

Such special measures became widespread, but probably not with much effect, for although they were most emphasized by Jamaica's planters, mortality among young children seems to have fallen less here than in Barbados or the Leewards (Table 11), and any reduction may have been due to general improvements, particularly as they affected the physique of nursing mothers. Perhaps in Jamaica, where the slaves were left so much to fend for themselves on the provision grounds, the young were more vulnerable than with the custom of distributed allowances, under which each individual was assured a basic ration. Orphans might lack family connections on which to claim; parents might be improvident or unreliable. One justification offered for the supervised meals was that any food not consumed by the children within the overseer's sight could be appropriated and sold off by adult slaves.⁸⁹ Nevertheless, these insinuations of selfishness or neglect fostered by the provision-ground economy were thoroughly disproved after emancipation, when Jamaican infant and child mortality declined sharply, particularly in those districts where the sugar estates proved least resilient.⁹⁰

It seems to have been the special needs of Jamaican sugar planting that did most harm to the young. In this colony they may have been spared from the task of grass collection, to a much greater extent than their contemporaries elsewhere,⁹¹ but

⁸⁷ Fitzherbert MSS, WI/9, W. Sutherland to W. P. Perrin, 7 Sept. 1784.

⁸⁸ Monson MSS, Thistlewood Diaries, 2 Dec. 1777, 17 Feb. 1778, 1 Sept. 1778; Clarendon MSS, Dep. c 357, J. Van Heelen to J. F. Barham, 23 June 1788; b 36, listing of slaves on Island estate 1831; Penrhyn MSS, J. Shand to G. H. D. Pennant, 26 Oct. 1814; Fitzherbert MSS, WI/16, C. Lewsey to Sir H. Fitzherbert, 1828; Slebech MSS, 11523, Nathaniel Phillips's instructions 1789.

⁸⁹ Penrhyn MSS, J. Shand to G. H. D. Pennant, 26 Oct. 1814.

⁹⁰ See Table 15; Roberts, *Jamaica*, 192.

⁹¹ Practice in the eastern Caribbean was variable. Martin Byams estate, Antigua, had

field work could be just as exacting—perhaps more so—even though masters hoped that children employed in properly organized gangs would have better chances of survival. Jamaican agriculture depended upon relatively large areas in cane and special grasses, with the demand for weeding labour correspondingly enhanced, and every manual of technique had its advice on the importance of a clean cultivation. Also children were made to assist in carrying manure.⁹² The Barbadian planter, with a modest acreage, could afford to keep most of his slaves out of the field until they reached the age of 9, and from this point until the moment when they entered the first gang at about 18 years their driver would usually be a woman.⁹³ Jamaican estate listings show that while by the nineteenth century the youngest labourers had a driveress, allegedly ‘armed with a pliant, serviceable twig, more to create dread, than inflict chastisement’, from their early teens they would probably be subject to a male driver and his cart whip or cat-o’-nine-tails.⁹⁴ Finally, although children were not involved directly in the most severe tasks of the sugar harvest, their parents were least able to look after them while it lasted. On St Kitts, Jamaica, and other islands where night-time sugar manufacture persisted, adult mortality increased towards the end of each year, but children were more at risk in the early months. There was a greater chance of them coming to harm from lack of supervision, by an accident, for example, or by eating unripe fruit, and less hope than usual that they could be successfully nursed through sickness.⁹⁵

grass-pickers aged from 3 to 10 in 1830: Appendix. But at Romney’s, St Kitts, in 1817 children up to 5 years were ‘unable to work’, those aged from 6 to 10 were ‘cleaning up the yard’, while those ‘picking grass and gathering fuel’ were aged from 10 to 12: Romney MSS, E 304, account of employment, 28 July 1817.

⁹² Roughley, *Jamaican Planter’s Guide*, 105.

⁹³ Higman, *Slave Populations*, 189–93, 199; Bennett, *Bondsmen and Bishops*, 14.

⁹⁴ Roughley, *Jamaica Planter’s Guide*, 105; Stewart, *Island of Jamaica*, 231; slave listings for Grange Hill and Perrins 1833: Appendix. Female drivers seem to have been unknown anywhere in the British West Indies before the 19th century.

⁹⁵ Fitzherbert MSS, W1/20, Perrins plantation stock accounts 1803–20; Romney MSS, A 144, stock accounts 1817–28; Sturge and Harvey, *West Indies in 1837*, 122. Thistlewood found in the 1770s that mortality among his slave children was substantially reduced when he stopped hiring out their mothers to sugar estates.

MEDICAL CARE

Apart from improved feeding and reduced work-loads, planters also tried to use medical care as a means of reducing slave mortality. Ever since the start of colonization there had been large numbers of men in the West Indies claiming, more or less plausibly, to practise medicine, but at first they concerned themselves mainly with the ailments suffered by the white population in an unfamiliar tropical environment. Then during the second half of the eighteenth century it became customary for estates to pay an annual fee, in proportion to the number of their slaves, for retaining a doctor's services. He was expected to make regular visits of inspection and provide appropriate care as the need arose.⁹⁶ It may also be possible to detect some improvement in quality from the 'doctor and farrier' or the 'ingenious young man, which understands barber chirurgery' that appear in the earliest records.⁹⁷ Increasing numbers of graduates arrived from the Scottish medical schools—their recruitment to the West Indies aided by the distaste in England for 'Scotch degrees'—and after each major war discharged naval surgeons found work on the plantations, where they could communicate the new principles of shipboard medicine.⁹⁸ Most estates were equipped for the first time with hospitals or 'hothouses' where invalids could be confined.⁹⁹ From 1815 expenditure on medical treatment seems to have been somewhat reduced, perhaps indicating a decline of provision as planters' revenues suffered in the post-war depression. On the other hand, demobilization as usual washed up many medical men in the West Indies, putting severe pressure on rates of pay, and there are signs of more discrimination in the use of purchased drugs, so it may have been possible to maintain already established standards of care at a reduced expense.¹⁰⁰

⁹⁶ Sheridan, *Doctors and Slaves*, ch. 11.

⁹⁷ British Library, Sloane MS 3984, papers concerning sugar plantations on Barbados 1687–8, fo. 216; Helyar MSS, J. Helyar to W. Helyar, 27 Mar. 1686.

⁹⁸ Sheridan, *Doctors and Slaves*, ch. 2; D. N. H. Hamilton, *The Healers: A History of Medicine in Scotland* (Edinburgh, 1981), 138–45.

⁹⁹ Sheridan, *Doctors and Slaves*, 270. For earlier examples of estates without hothouses see Helyar MSS, accounts 1687–1714; Romney MSS, E 284, inventory of Capt. Charles Pym's estate, St Kitts, 1742. For the disadvantages that this could entail, see Bodrhyddan MSS, J. Queely, Nevis, 5 Apr. 1766.

[See opposite page for n. 100]

It is clear that over most of our period the slaves received an increasing amount of medical attention, but how useful was this as an aid to health? The West Indies remained notorious as a destination for mountebanks, estate hospitals were regularly criticized as little better than squalid prisons, to which doctors made only the most irregular and perfunctory visits, and planters anxious for their crops were likely to force invalids back to work before treatment had time to take effect. In any case, considering the state of contemporary science it may be doubted whether medical procedures, however carefully applied, could have brought much relief. Some seem quite obviously useless, such as the attempts to cure consumptives or fatten up young children by making them spend days at a time sitting beside the rum stills, inhaling the gases given off by fermentation.¹⁰¹ Other measures—especially the use of mercury against yaws and venereal disease, or the drastic regimes of purging, bleeding, and blistering inspired by the theory of humours—probably did more harm than good. Indeed, it has been suggested that the slaves' escape from the ministrations of white doctors when sugar planting declined in the nineteenth century may have been a source of demographic improvement.¹⁰²

Alternatively, there is evidence from an early date of a sceptical attitude towards some of the harsher aspects of medical orthodoxy, and an appreciation of the benefits that could come from basic hygiene and decent feeding, as Thistlewood recorded.

[30 July 1751] Mr. Homer Jackson says, when negroes are lame with small sores, they are usually turned into the field, which is very prejudicial to them, by reason of wet and dirt, in so much that their sores oft get to the bone and become incurable. Whereas if they were kept dry and clean at home, many would in a little time be perfectly cured.

[31 July 1751] Dr. Joseph Horlock says, dry lint alone will cure a sore very well, if the patient have anything of a good habit of body. Ditto Dr. Duncan and Dr. Drummond.

¹⁰⁰ Sheridan, *Doctors and Slaves*, 45–6, 293, 297–8, 320; Higman, *Slave Populations*, 261–8; Romney MSS E 304, Dr T. O'Maley to R. Cardin, 28 May 1817; below, 162–3.

¹⁰¹ Sheridan, *Doctors and Slaves*, 47, 284–5, 290–1, 312; Nisbet MSS, 5476, Letter Book 1793–1812, J. Chisholme to J. Craggs, 27 Feb. 1795.

¹⁰² Craton, *Invisible Man*, 131.

* In 1754 Richard Beckford advised: 'The kitchen being more useful in raising and recovering negroes in most distempers than apothecaries shops; they do well together, but physick alone without proper care, and the help of what [the] kitchen affords, does rather injure or destroy than assist nature.'¹⁰³ From the 1760s such principles were reinforced by James Grainger's *An Essay on the More Common West-India Diseases*, the first of many published manuals on slave medicine. When this work was reissued in 1802 the editor William Wright thought it necessary to add a number of notes, indicating how practice or opinion had evolved in the mean time. Children should be weaned by 9 months; on all 'well-regulated estates, a mess of good soup is prepared daily at the overseer's house, for Negroe children'; 'a tent is generally erected near the field where the Negroes are at work, and all the young children are put there, under the care of a day nurse'; 'of late years, much improvement has been made in the cure of ulcers'.¹⁰⁴

There also seems to have been some change in attitudes towards the use of imported drugs. Originally drug-dealing had been an important source of income for West Indian practitioners, some of whom were financed by English apothecaries. But planters were soon protesting against the abuse of their property as a captive market for costly and destructive materials; many took over responsibility for the supply of medicines, or insisted that their cost be included in the doctor's fixed annual fee.¹⁰⁵ Perhaps partly for this reason, where Grainger prescribed eight or ten drops of laudanum, Wright thought that one was sufficient,¹⁰⁶ and while Thistlewood had used mercury freely, even as a prophylactic against worms in young children, according to early nineteenth-century doctrine it should be used sparingly or not at all.¹⁰⁷ In the 1750s the purging of the meconium from the newly born with 'opening powders' or

¹⁰³ Monson MSS, Thistlewood Diaries, 1758, 'Some Remarks from Mr Henry Drax's Instructions ...', fo. 172.

¹⁰⁴ Grainger, *Essay* (1802 edn.), 16, 19–20, 84. For an illustration of a field tent, see Craton and Walvin, *Jamaican Plantation*, facing p. 201.

¹⁰⁵ Sheridan, *Doctors and Slaves*, 43–4, 48, 70, 281, 299, 309; Craton, *Invisible Man*, 398–9.

¹⁰⁶ Grainger, *Essay*, 20.

¹⁰⁷ Monson MSS, Thistlewood Diaries, e.g. 3 May 1766, 14 Dec. 1770, 20 May 1771, 23 Aug. 1771, 22 Oct. 1775; Sheridan, *Doctors and Slaves*, 48, 87, 255, 303, 332; Grainger, *Essay*, 72, 74.

castor oil was regarded as the essential measure for their survival.¹⁰⁸ Subsequently, although retention of the meconium was still noticed by some writers as a possible cause of infant tetanus, much greater emphasis was given to hygiene. Women should be delivered in a well-aired room, preferably a purpose-built lying-in ward, with suitable bedding, and no fires near them. The umbilicus should be cut with a sharp instrument, the infant bathed in cold water, and supplied with clean linen.¹⁰⁹

The difficulty with evidence of this kind from medical manuals is to establish how far they were followed, for many authors made a point of contrasting the excellence of their own recommendations with the defects of current practice. Thus in the 1830s John Hancock, an advocate of hygiene in childbirth and cold baths for the newly born, was still denouncing the 'purging plan so commonly pursued' as a main cause of lockjaw among young infants, while James Maxwell complained about the continuing use of mercury in the treatment of yaws.¹¹⁰ But to what extent were remarks of this kind instigated by professional rivalry, or by irritation at planters who did not follow advice quite so completely as they ought? Do the repeated claims of incompetence and neglect confirm that no real progress was being made, or is the stream of publications on slave medicine a sign of how seriously improvement was being attempted? With other aspects of management—agricultural technique, for instance—manuals of advice can be set beside authentic information from plantation archives about cultivation schedules and crop yields, but the details of routine medical practice remain obscure. Doctors' papers are sparse and uninformative, and only two brief estate prescription registers have come to light.¹¹¹ We may know from inventories or records of construction costs that more hospitals were built, on an increasingly elaborate scale, without having any clear idea of how their inmates were treated,

¹⁰⁸ Monson MSS, Thistlewood Diaries, 19 July 1758, 21 Sept. 1759.

¹⁰⁹ Grainger, *Essay*, 16; Williamson, *Observations*, i. 130–1, 151, ii. 205–11; R. Renny, *A History of Jamaica* (1807), 207; Clyde, *Dominica*, 5; Sheridan, *Doctors and Slaves*, 230–1.

¹¹⁰ J. Hancock, 'Observations on Tetanus Infantum, or Lock-jaw of Infants', *Edinburgh Medical and Surgical Journal*, xxxv (1831), 343–7; Sheridan, *Doctors and Slaves*, 335.

¹¹¹ Sheridan, *Doctors and Slaves*, 306–9, citing the hospital book 1822–6 of Harmony Hall estate, Jamaica; Romney MSS, E 304, 'Hospital Account, Sunday ... July 27th 1817', for Romney plantation, St Kitts.

or with what results, and patterns of recorded mortality offer very little guidance.

* The one certain achievement of contemporary medicine was against smallpox. Inoculation, introduced to the West Indies in the 1720s, after spreading rather slowly at first, became general on sugar estates during the 1760s and early 1770s; vaccination was widely adopted within a few years of its invention in 1799.¹¹² These measures were not covered by a doctor's standard capitation fee, so their diffusion can be followed closely through estate correspondence and accounts. Yet although outbreaks of smallpox among unprotected populations could be very disruptive to estate routine, only about a tenth of those infected seem to have died, and in surviving records they had never accounted for more than a small proportion of total mortality (Table 18).¹¹³ Bowel complaints were a much more important category of improvement. By the 1770s it had been discovered that 'fluxes' could be treated with ipecacuanha—later to be established scientifically as a specific against amoebic dysentery—but although this drug came to appear regularly in apothecaries' stocks and invoices of estate stores, some writers still preferred dubious alternatives, such as rhubarb or castor oil.¹¹⁴ So it is unclear whether more appropriate management was an important supplement to better feeding against this cause of death. Only one controlled test has been found of an estate hospital's effects upon infant mortality. At Egypt plantation during the 1750s women were usually expected to give birth in their own houses, with the minimum of preparation, and just half of the newly born survived. Then from 1760 women were sent away a fortnight or so before delivery to lie in at the hospital on the proprietor's other estate, and the rate of infant mortality fell by

¹¹² Sheridan, *Doctors and Slaves*, 249–67; Bodrhyddan MSS, J. Queely, 12 Nov. 1767, 23 July 1773; Monson MSS, Thistlewood Diaries, 9 Sept. 1768; Fitzherbert MSS, WI/5, Blue Mountain plantation accounts, 1768; Nisbet MSS, 5477, Letter Book 1797–1802, W. Chisholme to J. Craggs, 1 Feb. 1801; Clarendon MSS, Dep. c 428, J. F. Barham to Messrs Wedderburn and Graham, 8 July 1802; Tudway MSS, Box 11, G. W. Ottley to C. Tudway, 1 Feb. 1809; Fitzherbert MSS, WI/20, P. Mahon to Sir H. Fitzherbert, 10 Aug. 1831.

¹¹³ Bennett, *Bondsmen and Bishops*, 56; Sheridan, 'Letters from ... Antigua', 13; Bodrhyddan MSS, J. Queely, 25 July 1762; Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 15 July 1768.

¹¹⁴ Monson MSS, Thistlewood Diaries, 12 Sept. 1775; Clyde, *Dominica*, 8–9; Sheridan, *Doctors and Slaves*, 330–1; Higman, *Slave Populations*, 269; Home of Wedderburn MSS, GD 267 5/4–5, invoices 1798–1818; Stewart, *Island of Jamaica*, 306.

20 per cent. After 1767, when Thistlewood stopped working at Egypt, so that he no longer had access to this facility for his own slaves, many more of his infants were lost, even though the health of their mothers was relatively good and they were allowed more time off work than before. Nevertheless, this single example cannot be conclusive.¹¹⁵

Following emancipation estate medicine was usually given up, while on most islands rates of natural reproduction greatly improved, suggesting perhaps that under slavery doctors could have been of little value. However, there are too many complicating factors for this to be a safe inference. Standardized mortality did not fall much, except among the very young, and even this modest progress only came with the drastic curtailment of sugar planting, as in Jamaica (Tables 14 and 15). In Barbados, where the estates survived the transition to free labour, there were widespread reports that infants' chances of survival had been reduced by their withdrawal from the hospitals.¹¹⁶ With the breakdown of arrangements for regular vaccination, smallpox became endemic once more, and cholera, which had been kept out of the British West Indies during the pandemic of 1831-3, caused havoc in many islands during the 1850s.¹¹⁷ Under 'apprenticeship' (the period of regulated labour between 1834 and 1838) ex-slaves complained about the loss of medical provision, and their subsequent failure to make use of the services arranged for them by some planters apparently reflected an aversion to any kind of contractual obligation rather than to European medicine as such.¹¹⁸ After applications from his followers, one missionary set up dispensaries as an aid to recruitment.¹¹⁹

INFLUENCES ON FERTILITY

While amelioration brought large reductions in mortality, its effects upon fertility were slight, and as a result British West

¹¹⁵ Monson MSS, Thistlewood Diaries.

¹¹⁶ Sturge and Harvey, *West Indies in 1837*, 3-4, 133; Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xliii (479) Q. 1451; Fifth Report from the Select Committee on Sugar and Coffee Planting, *Parl. Papers* 1847-8, xxiii, pt. II (206), QQ. 11287-8.

¹¹⁷ Green, *British Slave Emancipation*, 309-10.

¹¹⁸ Sturge and Harvey, *West Indies in 1837*, 237, Appendix, pp. xxxvii, xliii, xlv, xlvii.

¹¹⁹ W. F. Burchell, *Memoirs of Thomas Burchell* (1859), 303-4.

Indian slaves were more notable by the time of emancipation for low birth rates than high death rates, at least in comparison with the slaves of the United States.¹²⁰ It is true that in the West Indies fertility was not much lower than in Western Europe, but North America provides the more appropriate criterion. Europeans by this time had become internationally distinctive for postponing marriage until several years after the onset of sexual maturity, apparently in order to limit reproduction and protect or improve economic standards.¹²¹ Although slaves might be familiar with contraceptive technique, they did not have much cause or opportunity to develop 'prudential' restraints on fertility: in both the West Indies and the United States they were allowed (and sometimes compelled) to begin sexual relations at a much earlier age than was usual among contemporary Europeans.

Even in the early eighteenth century most planters had probably been favourable in principle to births on their estates, but it was only from about 1760 that deliberate attempts to encourage reproduction became common. One possibility was to buy a greater proportion of females from Africa, and on a few estates this may have been done, but not to any great extent before the later 1790s, when the belief gained currency that the transatlantic trade would soon be abolished. In general sex ratios among new purchases changed very little, and attention was concentrated upon raising women's fertility, rather than their share among estate populations. The first experiments aimed to improve the situation of breeding women and their children, through reduced work-loads and greater care at delivery.¹²² Then from the 1780s the feeling spread that it was necessary to go further, by encouraging more conceptions, rather than just trying to bring pregnancies to a successful term, although the inducements offered were designed to operate upon each point.

¹²⁰ In the early 19th-century United States the slaves' birth rate averaged about 50-5 and their death rate about 30-5, compared with birth and death rates (adjusted for under-recording) of about 35 in the British West Indies: Engerman, 'Economic and Demographic Comparisons', 270-2; P. D. McClelland and R. J. Zeckhauser, *Demographic Dimensions of the New Republic* (Cambridge, 1982), 73-83.

¹²¹ J. Hajnal, 'European Marriage Patterns in Perspective', in D. V. Glass and D. E. C. Eversley (eds.), *Population in History: Essays in Historical Demography* (1965), 101-43.

¹²² Sheridan, 'Africa and the Caribbean', 21; Klein, 'English Slave Trade', 30; Higman, *Jamaica*, 72; Nisbet MSS, 5477, Letter Book 1797-1802, W. Chisholme to J. Craggs, 3 May 1799; Tharp MSS, R. 55.7.123.2, listing of slaves on Good Hope plantation, 1804.

Mothers received rewards of various kinds, usually payable only after their infants had survived a fortnight or a month from birth. These included sums of money, special rations of rice, wheat flour, oatmeal, or sugar, and extra clothing, for example a 'distinguishing coat' or 'bedgown patterns'. In the 1790s some islands passed laws completely exempting the mothers of six or more living children from work.¹²³

But although such incentives became common, they seem to have achieved very little, for, as with the other attempts to improve the care of young children, they were developed most fully in Jamaica, the colony which made the least progress. Elsewhere gifts of money rarely exceeded a Spanish silver dollar (equal to about 4 shillings sterling); in Jamaica they reached 6 or 7 dollars. Breeding women here sometimes gained the right to keep cattle on estate land, a privilege that could not be feasible in the more densely populated colonies. Other Jamaican proposals—usually made by absentees—were even more elaborate: 'four degrees of kerchief for those having 7, 6, 5, 4, children', or a 'scarlet girdle' given to each mother, entitling her on feast days and holidays to special privileges. For each child that was born another medal was to be hung from the girdle and 'precedence is to follow the greater the number of medals'.¹²⁴ Yet the returns of births showed no real improvement, and comments on the subject became more exasperated: 'I really believe that the negresses can produce children; and when they are barren, it is just as hens will frequently not lay eggs on shipboard, because they do not like their situation.'¹²⁵

Whether or not this particular analogy is apt, fertility can certainly be affected to a much greater extent than mortality by personal habit, including mating practices or deliberate contraception. It is safe to assume that immediate physical circumstances—diet, work, or epidemiology—were the primary influences on slave mortality. However, fertility might also have

¹²³ Roberts, *Jamaica*, 236; Higman, *Slave Populations*, 348–52; Vassall MSS, W. Vassall to J. Wedderburn, 7 May 1788; Nisbet MSS, 5746, Letter Book 1793–1812, J. Chisholme to J. Craggs, 15 Feb. 1793; British Library, Add. MS 33294, Diary of J. H. Archer, fo. 48.

¹²⁴ Dunn, 'Two Plantations', 54; Sheridan, *Doctors and Slaves*, 230–4; Penrhyn MSS, 1477, D. Ewart to Lord Penrhyn, 6 Aug. 1807; Clarendon MSS, Dep. b 35, Mesopotamia plantation accounts 1830; Dep. c 375, J. F. Barham's memoranda on West Indian affairs 1815–30; Lewis, *Journal*, 108.

¹²⁵ Lewis, *Journal*, 76.

been 'socially' determined, and with the chance that a wider range of forces was at work analysis becomes more difficult.

An earlier discussion identified a change over the period of amelioration in the seasonal distribution of deaths, as summer crises in food supply were mitigated.¹²⁶ The seasonality of births is less intelligible. Thistlewood's diaries suggest that births were most common from July to October, as a result of better feeding and increased sexual activity between November and February, but this sequence has not been adequately confirmed through other contemporary observations (Fig. 9). Perhaps random variations generated from rather small samples obscure some common pattern. Furthermore, the seasonality of

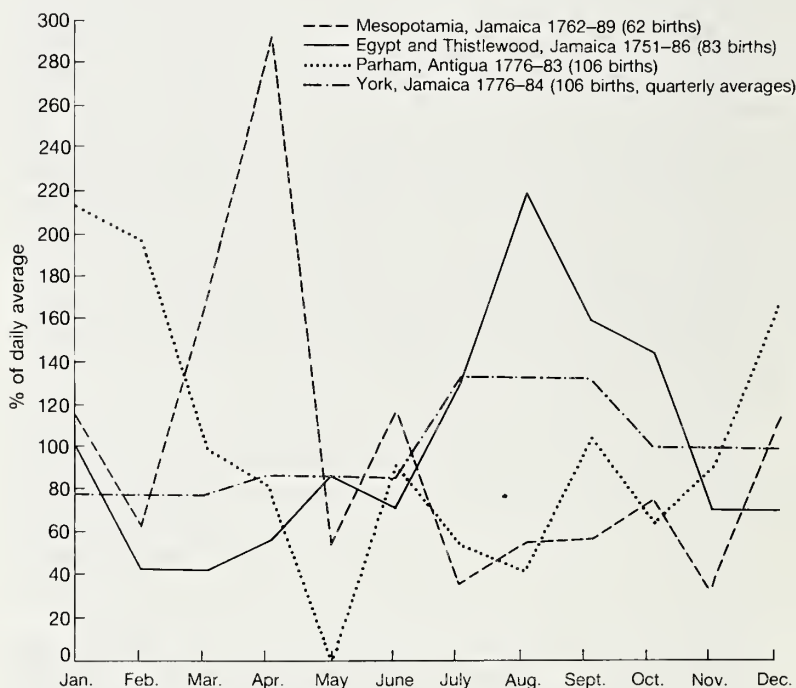


FIG. 9. Seasonality of Slave Births, 1751-1789

Sources: See Fig. 8.

¹²⁶ See above, Figs. 7 and 8.

recorded births may be determined not just by the incidence of conceptions lagged nine months but also by the frequency of miscarriages and under-recorded infant mortality, although neither of these secondary influences seems to have varied much through each year.¹²⁷ Seasonality comes out more clearly from the data for the later period, in a smoothed version of the cycle recorded by Thistlewood (Fig. 10). The frequency of conceptions leading to a successful birth seems to have been lowest during the summer months, and the results of the Christmas saturnalia show up in the September returns for the Westmoreland sugar estates. Otherwise, as with previous attempts to pursue this line of enquiry, no firm conclusions are possible about causes or tendencies.¹²⁸

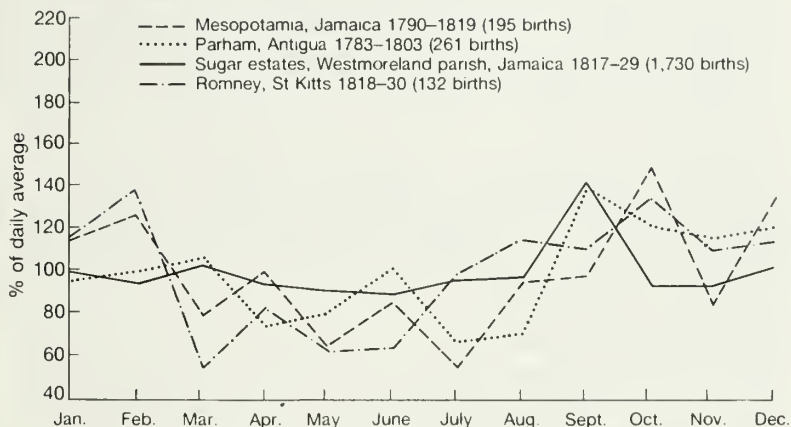


FIG. 10. Seasonality of Slave Births, 1783-1829

Sources: Romney: Romney MSS, A 144, stock accounts; otherwise as for Fig. 8.

¹²⁷ It was noticed above, p. 159, that infant and child mortality was heavier than usual during the sugar harvest, but according to the Thistlewood/Egypt and Romney data this was not true of infants under the age of 1 month. Their mortality, as a proportion of births, was fairly uniform through the year.

¹²⁸ Higman, *Slave Populations*, 362-4; D. B. Rutman, C. Wetherell, and A. H. Rutman, 'Rhythms of Life: Black and White Seasonality in the Early Chesapeake', *Journal of Interdisciplinary History*, xi, No. 1 (Summer 1980), 47-52.

Variations in fertility between properties are more instructive, and they show that work regimes had a considerable effect. Women committed to intensive sugar production were particularly infertile; less demanding activities usually brought higher rates of reproduction. Thus the women whom Thistlewood owned personally were nearly three times more fertile after their withdrawal from full-time sugar planting in 1767 than those he had managed at Egypt, even though both groups were for the most part recently imported from Africa. The registration returns, without indicating such marked fertility differences between occupations, show that slaves employed on cattle pens or in the cultivation of cotton or coffee had somewhat higher birth rates than those attached to sugar plantations; on the sugar estates high productivity was likely to be associated with below-average fertility. In Barbados, the only sugar colony which achieved a substantial increase in fertility under slavery, meticulous agriculture and the high quality of output allowed profitable operation with an unusually low volume of consignments per worker.¹²⁹ After emancipation, wherever sugar planting went into decline there was an immediate rise in the birth rate, even if, as in Jamaica, mortality showed little change (Tables 14, 15, 16, and 17).¹³⁰

Yet although the stresses of sugar planting were clearly an important influence, the impression remains that they may not fully account for low fertility in the British West Indies. The difference in vital rates between crops was much less pronounced for fertility than for mortality.¹³¹ Despite the post-emancipation increase in the Creoles' birth rate, until recently Caribbean populations of East Indian origin, Puerto Ricans, and North American blacks have all been considerably more fertile, without enjoying much superior material conditions.¹³² In the later nineteenth century Jamaica was especially remarkable for its low recorded birth rate, averaging about 37, compared with

¹²⁹ Higman, *Jamaica*, 123, 126, 216-18; Higman, *Slave Populations*, 326, 361-2; Sheridan, *Doctors and Slaves*, 241-2; Craton, *Invisible Man*, 90-117, 174-5.

¹³⁰ For the rise in the birth rate that followed the destruction of sugar planting on Saint-Domingue during the 1790s see Debien, *Les Esclaves*, 358.

¹³¹ Higman, *Slave Populations*, 374.

¹³² Roberts, *Jamaica*, 272-4; J. Byrne, *Levels of Fertility in the Commonwealth Caribbean 1921-1965* (Kingston, Jamaica, 1972), 4, 62; A. J. Coale and N. W. Rives, 'A Statistical Reconstruction of the Black Population of the United States 1880-1970', *Population Index*, xxxix (1973), 3-36.

45 or so in the smaller British islands of the eastern Caribbean (Table 16).

Many modern observers have identified marital instability and habits of casual mating as important reasons for low creole fertility,¹³³ and under slavery planters commonly argued along similar lines in extenuation of their failure to establish natural increase. As with mortality, their favourite theme was the unhelpful demographic characteristics that lay more or less beyond the reach of estate conditions, usually with deep-seated 'African' origins. Sterility resulted from venereal disease brought across the Atlantic and kept endemic within the colonies by 'the too early but above all the promiscuous intercourse between male and female'. 'Very early and excessive Debauchery' also impaired fertility through the injuries caused by the slave women's attempts to procure abortions, 'with a view of preserving their persons longer in request'. 'The women here are, in general, common prostitutes and many of them take specifics to cause abortion, in order that they may continue their trade without loss of time.'¹³⁴ It was sometimes acknowledged that there might be strong ties between parent and child, if not between husband and wife, but these could still be construed as unfavourable to reproduction. Parents—perhaps attempting to secure a maintenance in old age—allegedly used control of houses and provision grounds to discourage their offspring from taking regular partners who might provide an alternative focus of obligation.¹³⁵ Finally, the prolonged breast-feeding of infants, often for two or three years after birth, was said to reduce fertility, through the physical effects of lactation or the taboos against intercourse while it lasted.¹³⁶ It could be implied that these nursing habits were distinctively African.

There might have been some truth in such arguments, although they were obviously self-serving, and disregarded the effects of material deprivation and the white men's own sexual

¹³³ B. W. Higman, 'Household Structure and Fertility on Jamaican Slave Plantations: A Nineteenth-century Example', *Population Studies*, xxvii (1973), 527.

¹³⁴ Sheridan, *Doctors and Slaves*, 227–8, 244; Higman, *Jamaica*, 156; Long, *Jamaica*, ii, 436; Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Antigua, No. 11; Codrington (Antigua) MSS, C15, J. L. Walrond to Sir W. Codrington, 31 July 1785.

¹³⁵ B. W. Higman, 'The Slave Family and Household in the British West Indies, 1800–1834', *Journal of Interdisciplinary History*, vi, No. 2 (Autumn 1975), 282.

¹³⁶ Higman, *Slave Populations*, 353.

interference. Thistlewood's diaries confirm that prostitution, aggravated by food shortages, was rife; these and other sources show that women who nevertheless succeeded in keeping a regular mate were more fertile than those who did not.¹³⁷ It is clear also that while a significant minority of the British West Indian slave population did succeed in establishing conjugal ties, the nuclear family was weaker in the sugar islands than among the slaves of the United States, even though in North America, with its expanding western frontier, there was a greater chance that close kin would be separated by transfer or sale. Possibly slaves were better able to maintain family life in the United States because material conditions were on the whole less severe, or because white men there were more likely than in the West Indies to be discouraged from miscegenation, with the presence of a larger proportion of white women.¹³⁸ Evidence has been found that North American slaves weaned their infants earlier, at about one year after birth, following contemporary trends among white populations on both sides of the Atlantic. Perhaps in North America, where most slaves lived in rather small groups by the standards of the sugar estates, were locally born rather than imported, and where the white inhabitants were relatively numerous, African practice was displaced by new European influences to a much greater extent.¹³⁹ Points of this kind may be plausible, but no argument in which West Indian planters ever had a part can be accepted uncritically. How important is culture likely to have been compared with material determinants of fertility?

In some respects the 'social' interpretation of low fertility is quite unconvincing. The managers of estates near port towns, borrowing a favourite theme of contemporary European demographic analysis, liked to claim that breeding was discouraged by the 'vice' endemic in large centres of population, especially when

¹³⁷ Higman, 'Household Structure', 548.

¹³⁸ Sheridan, *Doctors and Slaves*, 243; Higman, *Slave Populations*, 364-73; Higman, 'Slave Family'; Higman, *Jamaica*, 139-75; M. Craton, 'Changing Patterns of Slave Families in the British West Indies', *Journal of Interdisciplinary History*, x, No. 1 (Summer 1979), 1-35; H. G. Gutman, *The Black Family in Slavery and Freedom, 1750-1925* (New York, 1976); Dunn, 'Two Plantations', 40-9, 60, 64.

¹³⁹ H. S. Klein and S. L. Engerman, 'Fertility Differentials between Slaves in the United States and the British West Indies: A Note on Lactation Practices and their Possible Implications', *William and Mary Quarterly*, 3rd Ser. xxxv (1978), 357-74.

they were frequented by seamen.¹⁴⁰ However, the registration returns show little evidence of this.¹⁴¹ There was a particular stress upon the misbehaviour of young women, and while to some extent venereal disease or repeated abortions might impair their fertility later in life, the inference often followed that the earliest years of child-bearing capacity were particularly affected:

... the Negro women are not as prolific as the women in this country [Great Britain], which I apprehend to be owing to excessive and promiscuous intercourse with the other sex, and that commenced at a very early period; from this cause, they do not in general breed till a pretty advanced age, when they are not so much of objects of desire with the men; therefore a great part of the most proper time for the propagation of the species is totally lost.¹⁴²

Yet profiles of age-specific fertility among British West Indian slaves resemble those found among black women in the nineteenth-century United States (Table 20). The average age of slave women in the sugar colonies at the birth of their first child—between 20 and 22 years—seems to have been a little later than in the United States, but this may be simply the result of inferior physique and later menarche in the Caribbean.¹⁴³ The relative infertility of West Indian slave women was equally pronounced throughout their years of potential child-bearing, except perhaps among Africans. These recent arrivals, often in particularly poor health, would in early adulthood be less likely than Creoles to find mates.¹⁴⁴

¹⁴⁰ Bodrhyddan (Additional) MSS, R. Thomson, 1 Mar. 1797; Clarendon MSS, Dep. c 381, Bundle 2, J. F. Barham's 'Memoranda on West India Subjects: Reply to Sir J. Sinclair', c1820; Codrington (Antigua) MSS, C38, J. Liggins to C. B. Codrington, 11 May 1832.

¹⁴¹ Higman, *Slave Populations*, 360.

¹⁴² Dr John Castles of Grenada, to the House of Commons Select Committee on the Slave Trade, 1790, quoted in Sheridan, *Doctors and Slaves*, 227.

¹⁴³ Dunn, 'Two Plantations', 58–9; Tudway MSS, Box 9, Parham plantation stock accounts 1776–1803; Romney MSS A 144, Romney plantation stock accounts 1817–32; Gutman, *Black Family*, 50, 114, 171; J. Trussell and R. Steckel, 'The Age of Slaves at Menarche and Their First Birth', *Journal of Interdisciplinary History*, viii, No. 3 (Winter 1978), 492. Among female slaves the phase of maximum growth in stature, which usually precedes menarche by one year, occurred at about 13 years of age in the USA and at 15 years in Trinidad; B. W. Higman, 'Growth in Afro-Caribbean Slave Populations', *American Journal of Physical Anthropology*, 2nd Ser. I (1979), 382.

¹⁴⁴ Among slaves fertility was less concentrated into early adulthood than in the modern British West Indies, but during the 20th century the deliberate limitation of completed family size has become more common, so modern populations do not provide

TABLE 20. *Age-specific Fertility Rates, 1754-1884 (Births per 1,000 Women Aged 15-44)*^a

Age group	Africans						
	Egypt, Jamaica 1754-1767	Thistlewood, Jamaica 1758-1786	Parham, Antigua 1776-1803	Perrins, Jamaica 1803-1820	Montpellier, Jamaica 1817-1832	Romney, St Kitts 1817-1830	Tobago 1819-1821
15-19	17	94	[31]	[54]		0	[99]
20-4	69	200	[91]	[128]		500	[90]
25-9	53	182	[67]	[122]	[64]	125	[90]
30-4	0	170	[95]	[103]	[99]	167	[90]
35-9		37		[103]	[82]	0	[53]
40-4		0		[32]	[12]	0	[32]
15-44	49	149	[65]	[94]	[53]	117	[56] ^b
Number of woman years	206	256	186	206	1,106	77	64,500

Age group	Creoles					
	Parham, Antigua 1776-1803	Perrins, Jamaica 1803-1820	Montpellier, Jamaica 1817-1832	Romney, St Kitts 1817-1832	Bull Dead, Jamaica 1817-1830	Tobago 1819-1821 US blacks 1880-1884
15-19	[18]	[89]	[32]	49	[73]	[103]
20-4	[141]	[130]	[105]	169	[250]	[154]
25-9	[136]	[101]	[112]	209	[214]	[109]
30-4		[110]	[75]	147	[127]	[96]
35-9		[101]	[75]	81	[111]	[99]
40-4		[71]	[55]	10	[45]	[49]
15-44	[68]	[101]	[72]	117	[162]	[109] ^b
Number of woman years	384	1,064	2,505	1,006	384	67,000

^a Figures in square brackets are affected by the substantial under-recording of births.

^b Rate for age group 10-54.

Sources: Egypt, Thistlewood, Parham: as in Table 11; Perrins: Fitzherbert MSS, W1/20, stock accounts; Montpellier, Bull Dead: Higman, *Jamaica*, 117-18; Romney MSS, A 144, stock accounts; Tobago: Higman, *Slave Populations*, 358, 467; US blacks: Coale and Rives, 'Black Population of the United States 1880-1970', 28.

As explanations for other details of fertility the planters' arguments seem insufficient rather than demonstrably false. The main reason for the rapid increase in birth rates immediately after emancipation is likely to have been a decline in women's work rates, rather than some sudden change in cultural practice, but how should the higher levels of fertility in Barbados towards the end of slavery be explained? Must they be attributed entirely to the island's less arduous methods of sugar production? There are also indications that sexual relations may have been rather more ordered here than in the other sugar colonies, perhaps because in Barbados alone among the British West Indies large numbers of white women were present to encourage decency, as in the United States.¹⁴⁵ Barbados was the only island where planters seriously attempted to prohibit 'improper intercourse' between their slaves and white employees, evidently with some success, for the registration returns show that on the larger estates miscegenation was becoming less common after 1817.¹⁴⁶ Special incentives were offered to promote coresident unions among the slaves.¹⁴⁷ Most of the handful of privately compiled British West Indian slave listings which distinguish family relationships come from Barbados, including two documents, almost unique within the region, purporting to record paternity and implying that in most cases a woman had all her children by the same man.¹⁴⁸

an appropriate comparison: Higman, *Slave Populations*, 357; Roberts, *Jamaica*, 273; Byrne, *Fertility*.

¹⁴⁵ Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770-1, fo. 49.

¹⁴⁶ Higman, *Slave Populations*, 150.

¹⁴⁷ Higman, *Slave Populations*, 351; Higman, 'Slave Family', 270. A clause of the 1798 Leeward Islands slave law required masters to encourage regular unions, but no example has been found of this provision being implemented.

¹⁴⁸ Plantation listings from Barbados recording families include Turners Hall 1780, 1821 (Fitzherbert MSS, WI/17), Newton and Seawells 1796, giving details of paternity (Newton MSS, 523/288, 292; Higman, 'Slave Family', 269, 282). The only other enumerations of British West Indian slave families or households known to survive from private archives are for Vreedenhoop, Demerara 1825 (Gladstone MSS, CH 55), and the Montpellier estates in Jamaica 1825 (Higman, 'Household Structure'). Families were also recorded in the registration returns for Trinidad, St Lucia, Berbice, British Honduras, and the Bahamas, usually when this was required by local law: Higman, *Slave Populations*, 12-14, 24-5; Craton, 'Slave Families', 5. Details of maternity are quite common in accounts of slave populations, but the only other record of paternity apart from the Newton/Seawells example that has been found for the British West Indies is in a return of births on the Frontier estate, Jamaica 1773: Stirling of Keir MSS, T-SK 21/3. Fathers are named more frequently in North American slave listings: Gutman, *Black Family*, 52-8, 105-13, 125-8, 172-8, 190. The Newton/Seawells data should perhaps be viewed sceptically, for although they imply quite stable unions, five years later the estates' manager reported

On the other hand, whatever attempts may have been made to regulate behaviour, it is not clear that they had any marked effect upon moral standards. Under slavery miscegenation continued unchecked on small holdings, the Society for the Propagation of the Gospel had great difficulty in trying to promote Christian marriage on its own estates, and subsequently Barbados matched most other Caribbean territories in the frequency of illegitimate births and consensual unions.¹⁴⁹ On the Turners Hall estate in the island's Scotland district, where the terrain made sugar planting more arduous, the rate of natural increase was much lower than in Barbados as a whole.¹⁵⁰ All this implies that material conditions were more important than social practices as influences upon the birth rate.

Similar difficulties arise in assessing the demographic significance of the lactation period. First, as Higman has shown, its length seems to have varied quite considerably, with eighteen months rather than two years being closer to the average, although many planters clearly would have liked weaning to have been completed even earlier, and tried to encourage this by coercion or monetary rewards.¹⁵¹ Second, however long nursing may have been continued, its contraceptive effect is doubtful. Some investigators believe that breast-feeding into the second year after birth depresses the physical potential for fertility to only a limited extent,¹⁵² and it is improbable that taboos against intercourse during lactation remained strong after the passage from Africa.¹⁵³ The average spacing between births to individual women was certainly longer in the British West Indies than among slaves in the United States, but how much of the

that formerly the slaves' morals had suffered from their practice of roaming about at night to steal food: Newton MSS, 523/458, S. Wood to T. Lane, 18 Nov. 1801.

¹⁴⁹ Higman, *Slave Populations*, 150; Bennett, *Bondsmen and Bishops*, 116-18, 122-3.

¹⁵⁰ Fitzherbert MSS, W1/17, Turners Hall stock accounts 1820-34.

¹⁵¹ Higman, *Slave Populations*, 353-4; Bennett, *Bondsmen and Bishops*, 13; Penrhyn MSS, D. Ewart to Lord Penrhyn, 6 Aug. 1807; slave listings of Waltham, Grenada 1804, with infants nursing up to 15 months; of Perrins and Grange Hill, Jamaica 1833, with infants nursing up to 2 years: Appendix.

¹⁵² Klein and Engerman, 'Lactation Practices', 371 n. 39; T. McKeown, 'Food, Infection, and Population', *Journal of Interdisciplinary History*, xiv, No. 2 (Autumn 1983), 233-4. On the other hand, R. J. Lesthaeghe and H. J. Page, 'The Post-partum Non-susceptible Period: Development and Application of Model Schedules', *Population Studies*, xxxiv (1980), 143-69, conclude that variations in the age at weaning over the range from 10 to 20 months have considerable effects upon fertility.

¹⁵³ Kiple, *Caribbean Slave*, 111.

difference should be attributed to lactation practices, rather than the greater severity of Caribbean plantation life?¹⁵⁴

One measure of the specific importance of breast-feeding is the extent to which the death or survival of an infant affected its mother's chances of giving birth again. In the United States, among slaves giving birth between the ages of 18 and 30, when a child survived into its second year the average interval before a subsequent delivery was somewhat over twenty-four months; for mothers whose children were stillborn or died during the first three months, the interval was slightly more than twelve months.¹⁵⁵ Similar data for West Indian estates imply that deaths there in early infancy were associated with a slightly greater curtailment of the average birth interval, perhaps indicating the effects of prolonged lactation (Table 21). However, even when a child died during its first three months, in Jamaica at least the average period that elapsed before the mother gave birth again was much longer than in the United States. So it is not clear that West Indian nursing methods were a principal cause of extended birth intervals.

TABLE 21. *Average Intervals between Births to the Same Woman, 1754-1830 (Months)*^a

	Egypt/ Thistlewood, Jamaica 1754-1786	Parham, Antigua 1776-1803	Perrins, Jamaica 1803-1820	Romney, St Kitts 1817-1830
Previous child dies aged 0-3 months	24 (26)	[19] (3)	[55] (5)	15 (17)
Previous child survives beyond 12 months	40 (26)	[46] (210)	[48] (48)	35 (56)

^a Figures in square brackets are affected by the substantial under-recording of births. Figures in round brackets indicate number of observations.

Sources: As for Table 20.

¹⁵⁴ The spacing between surviving children seems to have averaged 3-4 years in the British West Indies and slightly less than 3 years in the USA: see below, Table 20; Klein and Engerman, 'Lactation Practices', 368; Dunn, 'Two Plantations', 61; Newton MSS, 523/288, 292, listings of slaves on Newton and Seawells plantations 1796.

¹⁵⁵ Fogel and Engerman, *Time on the Cross*, i. 137.

Furthermore, lactation practices fail to account for the large proportion of British West Indian slave women who had no recorded children at all—about half in the mid-eighteenth century, and still as many as a third at the time of emancipation, compared with only a tenth in the United States.¹⁵⁶ Finally, even if births were inhibited in the West Indies by extended breast-feeding, it cannot be assumed that this was mainly due to the strength of African habits, for nursing practices are influenced by current experience as well as inherited tradition. The postponement of weaning, even post-natal sexual abstinence, may have been intended to improve the infants' prospects for survival when food supplies were insufficient,¹⁵⁷ and planters frequently complained that mothers attempted to use their children as a means of escaping work. As Roughley put it for Jamaica, women wished to delay weaning, 'with the two-fold view of making the child strong, and having loitering, idle time to spend. The latter motive, I believe, is the most predominant.'¹⁵⁸ It is uncertain whether any of the increase in fertility that occurred on this island after emancipation and the decline of sugar planting was due to a change in the length of breast-feeding, still complained of as an obstacle to natural reproduction in the 1850s. By the 1920s, however, 9 months was said to be the usual age for weaning here.¹⁵⁹

The discussion so far, based mainly on the records of sugar properties, has done little to establish culture or social custom as major demographic influences. However, we must now refer once again to the evidence from estates raising other crops: this makes it seem doubtful whether low British West Indian fertility can be attributed entirely to material conditions. Clearly life on properties devoted to coffee or cotton, for example, was less arduous than on sugar plantations, with a lower weight of output

¹⁵⁶ Monson MSS, Thistlewood Diaries; Clarendon MSS, Dep. b 37, Island plantation, 'List of Negroes Living in 1747 and Their Offspring ... in 1769'; Smyth MSS, AC/WO 16(34), inventory of Spring plantation 1746. Craton, *Invisible Man*, 409 n. 18; Craton, 'Hobbesian or Panglossian', 342-3; Dunn, 'Two Plantations', 58; Tudway MSS, Box 9, Parham plantation stock accounts 1776-1803; Klein and Engerman, 'Lactation Practices', 366; Trussell and Steckel, 'Age of Slaves at Menarche', 491.

¹⁵⁷ Kiple, *Caribbean Slave*, 34-7; A. I. Richards, *Land, Labour and Diet in Northern Rhodesia* (Oxford, 1939), 67.

¹⁵⁸ Roughley, *Jamaica Planter's Guide*, 118; Sheridan, *Doctors and Slaves*, 245; Lewis, *Journal*, 277.

¹⁵⁹ Roberts, *Jamaica*, 247; M. W. Beckwith, *Black Roadways* (Chapel Hill, 1929), 58.

per slave, less replanting, and no regular night work. As a result, such 'minor staples' were associated with quite moderate mortality. Yet although their slaves were more fertile than those employed in growing sugar, they were still significantly less fertile than North American slaves, even when allowance is made for unrecorded births. Indeed, within the British West Indies slave fertility approached North American levels only on such marginal colonies as Barbuda and the Bahamas, where few slaves were subject to any kind of plantation regime (Table 22).¹⁶⁰

TABLE 22. *Demographic Indicators for Slaves Employed in Various Crops, 1817-1832 (Recorded Rates per 1,000)*^a

	Death rate	Birth rate	Natural increase
<i>Jamaica 1829-32</i>			
Sugar estates	[35.1]	[22.7]	-12.4
Coffee estates	[25.3]	[25.1]	+1.8
Manchester parish ^b	[19.4]	[25.8]	+6.4
Port Royal parish ^b	[22.4]	[24.5]	+2.1
<i>Demerara/Essequibo 1829-32</i>			
Sugar estates	[40.4]	[20.2]	-20.2
Coffee estates	[32.0]	[17.3]	-14.7
Cotton estates	[25.1]	[26.2]	+1.1
<i>Bahamas 1822-34</i> ^c	[14.8]	[34.8]	+20.0
<i>Barbuda 1817-32</i> ^c	[10.2]	[32.9]	+22.7

^a Figures in square brackets are affected by the substantial under-recording of infant mortality: e.g. Higman, *Slave Populations*, 605-12, estimates 'true' birth rates of 63 for the Bahamas and 46 for Barbuda. His estimate of a 35% under-recording in Demerara/Essequibo suggests a 'true' birth rate on its cotton estates of 40.

^b All slaves. The slaves of Manchester and Port Royal parishes were mainly employed in coffee planting: Higman, *Jamaica*, 21.

^c All slaves. The slaves of the Bahamas and Barbuda were employed mainly with food crops, livestock, salt-raking, and fishing: Higman, *Slave Populations*, 65-6.

Sources: Higman, *Jamaica*, 106, 116, 123; Higman, *Slave Populations*, 326, 416, 608.

¹⁶⁰ Higman, *Jamaica*, 21-4; Higman, *Slave Populations*, 167-8, 212-14, 324-9, 702.

In both Jamaica and Demerara/Essequibo the crude death rate was inflated during the period 1829-32 by the large numbers of ageing Africans, putting these colonies at a disadvantage in comparison with the USA. However, their birth rates could not have been similarly affected, for nearly all fertile-age women were Creoles by this time. Closer examination confirms that fertility on British West Indian coffee and cotton plantations was limited, despite highly favourable patterns of creole mortality, roughly 35 per cent less on early nineteenth-century sugar estates, and probably no higher than among North American slaves (Tables 11-13 and 23).¹⁶¹

TABLE 23. *Age-specific Mortality Rates of Creole Slaves Employed on Coffee and Cotton Estates, 1817-1832 (Deaths per 1,000)*^a

Age group	Manchester parish, Jamaica 1817-20 ^b (24,234) ^c		Port Royal parish, Jamaica 1817-20 ^b (11,526) ^c		Demerara/Essequibo 1829-1832	
	Males	Females	Males	Females	Coffee estates (4,968) ^c Males and females	Cotton estates (3,942) ^c Males and females
0-4	[24]	[23]	[39]	[20]	[32]	[39]
5-9	10	11	7	9		
10-19	12	10	7	8	10	4
20-9	15	10	3	9	14	8
30-9	16	8	17	5	34	10
40-9	32	14	14	0	29	17
50+	61	38	20	17	57	48
All ages	[17]	[14]	[18]	[12]	[22]	[17]

^a Figures in square brackets are affected by the substantial under-recording of infant mortality.

^b Slaves in Manchester and Port Royal parishes were employed mainly in coffee planting; Higman, *Jamaica*, 21.

^c Number of slave years.

Sources: Manchester and Port Royal parishes: Higman, *Jamaica*, 261-7; Demerara/Essequibo: as for Table 12.

¹⁶¹ For estimates of age-specific mortality rates among North American blacks 1800-60, see McClelland and Zeckhauser, *Demographic Dimensions*, 165-82.

If life expectancy among Creoles on a Demerara/Essequibo cotton estate matched closely that of their counterparts in the USA, why should they not have been equally prolific? The determinants of fertility in the minor staples cannot be analysed at all closely: comprehensive privately kept records survive only for sugar estates,¹⁶² and registration returns give insufficient details of maternity. Our discussion must therefore remain highly conjectural.

First, it is still unlikely that rooted African customs of prolonged breast-feeding did much to limit reproduction in the West Indies. The slaves of the marginal colonies were relatively fertile, even though they had the fewest opportunities to observe and imitate the Europeans' adoption of earlier weaning. Furthermore, this aspect of human behaviour could be expected to alter only quite slowly, yet birth rates often rose suddenly just after emancipation. To a large extent these increases were associated with the decline of sugar planting; as a rule the colonies or districts where planters had most success in maintaining sugar production with creole labour—Barbados, Antigua, St Kitts, and lowland Jamaica—saw the least improvement in birth rates, presumably indicating the importance of labour regimes. But there was also a marked rise of fertility in Jamaica's main coffee-planting parish, where conditions had not been especially arduous.¹⁶³ So we must look for influences which were specific to British West Indian plantation slavery, were susceptible to rapid change, and were not simply the effects of severe treatment. The likeliest candidates are habits of mating and miscegenation.

It has already been noticed that mating in the West Indies, though not entirely casual, was less regular than in the United States, and clearly a major source of difference on this point between the two regions was the likelihood, much greater in the West Indies, that slave women would be taken by white men as sexual partners. Whatever the basis of these relationships—the masters' coercive power, economic inducement, or mutual

¹⁶² For this reason it is also impossible to establish whether mortality among slaves in the minor staples declined during the period of amelioration, as happened on sugar estates.

¹⁶³ In Manchester parish, Jamaica, between 1817 and 1844 the ratio of children aged 0-4 to women aged 15-49 increased by 51%, a change very similar to that which occurred over the island as a whole: Higman, *Jamaica*, 261; K. Tekse, *Population and Vital Statistics, Jamaica, 1832-1964: A Historical Perspective* (Kingston, Jamaica, 1974), 16-23.

attraction¹⁶⁴—where absentee ownership was well established they served the convenience of transient estate supervisors, and so usually lasted only a short while, setting standards of inconsistency for the slave community as a whole. No doubt some slave women were discouraged from forming stable unions with slave men by the hope of securing the privileges of a white man's mistress. As a rule, the higher the proportion of slave children fathered by whites, the weaker was the nuclear family and the lower the birth rate.¹⁶⁵ Within the British West Indies miscegenation was least frequent on the estates of Barbados (where resident planters exercised a restraining influence) and on the marginal colonies (where there were very few white people). On Jamaica, although most common in the sugar-growing districts, it was widespread in the coffee parishes of Manchester and Port Royal as well.

Also, mating without coresidence was likely to be relatively unstable and infertile, and slaves in the British West Indian plantation colonies were notable for the frequency with which they chose spouses who belonged to other properties.¹⁶⁶ This characteristic cannot be explained by any special need to avoid partnerships with near kin, bearing in mind the large average size of Caribbean slave holdings, and their many Africans and first-generation Creoles. In the nineteenth-century United States, where slaves were usually owned in much smaller groups, and where the black population was almost entirely American born, partners more frequently lived together under the same master.¹⁶⁷ Inter-plantation unions may have been discouraged here by the stricter controls on movement at night which could

¹⁶⁴ The Thistlewood diaries are the most useful source of information on this subject. Although they show that the white man often imposed himself with force, they also partly confirm the emphasis given by Long, *Jamaica*, ii. 415, to inducement by money and 'courtship'.

¹⁶⁵ Thus in Jamaica 1829-32 the percentage of slave births fathered by white men stood at about 15 in the western sugar parishes, 10.7 in the island as a whole, 9.2 in Port Royal parish, and 6.9 in Manchester: Higman, *Jamaica*, 140. In the early 19th-century USA the proportion was 'less than 5 per cent': S. L. Engerman, 'The Realities of Slavery: A Review of Recent Evidence', *International Journal of Comparative Sociology*, xx (1979), 58 n. 19. See also Higman, *Slave Populations*, 147-51, 364-73; Craton, 'Hobbesian or Panglossian', 338-42.

¹⁶⁶ Higman, *Slave Populations*, 368-71; Debien, *Les Esclaves*, 349.

¹⁶⁷ Gutman, *Black Family*, 52-8, 105-13, 125-8, 131-43, 156, 160-2, 172-8. Higman, *Slave Populations*, 365-6, and 'Slave Family', 276, shows that the proportion of British West Indian slaves living in families increased with the size of holding.

be maintained with a large white population, and by the concern of many North American masters for conjugal fidelity, obviously much more difficult to ensure when couples were widely separated. In the British West Indies, after the day's gang labour had ceased, slaves were left much more to their own devices, at liberty to form distant 'visiting' relationships. Thus emancipation could have immediate and striking effects on the rate of population growth, not only by reducing the intensity of labour, but also by allowing partners to come together on a more regular basis,¹⁶⁸ and by impairing the white man's attractions or authority as a suitor.

CONCLUSION

In the eighteenth century the slave populations of the British West Indian sugar colonies suffered persistent natural decrease; in the early nineteenth century on Barbados and the Leeward Islands they reached the point of maintaining or even increasing their numbers, despite the planters' economic difficulties. Progress was rather more limited on Jamaica, and interrupted by an accelerating rate of depletion after 1820, but this resulted mainly from the ageing of the last generation of African slaves, imported before 1808, rather than any long-term deterioration in standardized vital rates.* By the time of emancipation the Creoles on Jamaica's sugar estates had achieved natural increase.¹⁶⁹ Evidently most of this demographic change was a result of amelioration, which operated especially through the effects of better diet in reducing mortality. By itself the closure of the African slave-trade could have brought only a modest improvement in rates of depletion.

It is difficult to specify the effects of medical care. The building of hospitals and the employment of doctors are clear indications of a serious concern to improve the rate of reproduction, and it is unlikely that such claims on estate revenue would have been allowed for long if they had been completely unhelpful. While

* See endnote 5.

¹⁶⁸ Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), QQ. 5029, 5260-1, 5535; Sturge and Harvey, *West Indies in 1837*, Appendix, p. lxxvi.

¹⁶⁹ Higman, *Jamaica*, 61-8, 94-8, 101-5, 123, 134-8; Higman, *Slave Populations*, 312; and see below, endnote 5.

Europeans seeking relief for their own disorders might be sufficiently desperate and credulous to accept the most fanciful medical doctrines, in the treatment of their slaves they could be more dispassionate. The conditions of estate life gave chances for observation and controlled experiment. The performance of individual practitioners was noted, and action could be taken if they did not give satisfaction.¹⁷⁰ Besides, medical men themselves became considerable owners of slaves, acquiring an unusually close interest in their patients' survival and in establishing the most effective, economical procedures. They were the only important group of white men in regular contact with the slaves who were not solely concerned with the maximization of profits and sugar production, having some capacity to act as an influence against the brutality inherent in estate life. Before the nineteenth century, when missionaries took the lead, medicine was the profession that supplied the most informed critics of British West Indian slavery.¹⁷¹ Although by modern standards they lacked any thorough scientific understanding, some doctors had sensible advice to offer on the value of adequate diet and basic hygiene, and Thistlewood's diaries show that as relatively experienced, well-educated men their opinions might carry weight even with a hardbitten planter. However, apart from preventive measures against smallpox, the contribution of medicine to the mortality decline cannot be distinguished from more general improvements.

At emancipation, after three-quarters of a century of amelioration, sugar planting remained almost unmatched in the severity of the demands imposed on its labour force. Night working during crop, exposure to the wet and cold in cane holing and planting, the squalor and congestion of estate villages, all continued to take their toll. Barbados was the only sugar colony where natural increase had been securely established, on the basis of unusually small, often resident-owned estates, under such careful management that the modest volume of output was fully compensated by its high quality and low costs of production. Antigua came closest to matching the efficiency gains secured on Barbados. Elsewhere, demographic improvement was accompanied by the virtual disintegration of the estate

¹⁷⁰ Vassall MSS, W. Vassall to J. Wedderburn, 1 Sept. 1777.

¹⁷¹ e.g. Sir Hans Sloane, James Ramsay, and George Pinckard were doctors.

economy, as on Montserrat, or by severely reduced sugar production and profitability, as on St Kitts. On Jamaica, although output per slave fell a little after 1815 and some of the most laborious properties gave up making sugar completely, many planters persisted in the old traditions of hard driving, because of greed, force of habit, the pressure of falling produce prices, or the burden of accumulated debts. The dry-weather, ratooning estates were still in a minority.

Those slaves who had reached adulthood without suffering a disabling accident or illness, who had become inured to the estate routine, perhaps acquiring some specialist occupation, who had established their own provision grounds, or could claim on family connections, had much better chances of survival to old age than their eighteenth-century predecessors. Emancipation, even withdrawal from sugar planting, would do little more to improve their situation, considered in purely material terms (Tables 14 and 15). But mortality was still heavy among the youngest slaves, whether because of insufficient parental care or the work that children were required to do. Almost every estate listing recorded its complement of 20- and 30-year-old invalids: 'ruptured', 'weakly', 'ulcerated', 'infirm from sores', 'diseased and worthless'.¹⁷²

The deficiencies of amelioration are clearest in its almost complete failure to raise birth rates, largely because while standards of maintenance could be improved, it was much more difficult on sugar estates to reduce the severity of women's work, a major obstacle to successful child-bearing. Planters recognized the association between overwork and infertility; they sought to improve matters by giving extra relief during what seemed to be the critical period immediately before and after childbirth. But measures of this kind had to contend against the pressures to maximize production, especially in Jamaica. Able-bodied young women were always required to assist with the heaviest work,¹⁷³ and although cane holing was mitigated by the greater use of ratoons and the plough, manuring became more arduous. Harvest labour was aggravated as the volume of production

¹⁷² These expressions are taken from the slave listings for Good Hope, Mount Carmel, Ferry, and Grange Hill estates: Appendix.

¹⁷³ From at least the middle of the 18th century until emancipation women accounted for about 60% of the main field gangs: see the slave listings enumerated in the Appendix; Higman, *Jamaica*, 188-208.

grew, supplies of firewood ran out, and planters reacted to economic depression by reducing their purchases of coal. While men had cut copperwood, by custom women were responsible for handling materials about the works, and very little was done to make the task easier. Improvement in the design of mills concentrated on raising their throughput, and their appetite for cane. Contemporary engineering did not allow any significant increase in extraction rates, which might have eased the demands on mill feeders and trash carriers.¹⁷⁴

With the abolition of the slave-trade, planters became more conscious of the effect that factory operations could have upon fertility:

I was in company last week with some Jamaica planters who gave it as their opinion that setting young women to carry out the trash from the mill—in which operation they must stoop a great deal—was injurious to their breeding and that the trash might be carried out in little light carts or on asses or mules.¹⁷⁵

However, although cane carriages on railways came into general use at the mills in Demerara, where good profits could still be made and the crop lasted for most of the year, few planters in the older colonies felt that they could afford such novelties.¹⁷⁶ Men followed the ploughs, led the cart-loads of cane from the fields, and operated the improved boiling equipment; women's work was mechanized more slowly, as has happened so often in the history of technology. In these circumstance the extra rest allowed to women shortly before giving birth could not do much to increase fertility, for the risk of miscarriage is greatest during the early months of pregnancy,¹⁷⁷ and the problem of ensuring adequate care for young children after their mothers had gone back to the fields still remained. The only effective measure

¹⁷⁴ Under slavery only 50–60% of the juice was ground out of the cane, compared with the extraction rates of 80–90% achieved in the later 19th century, after more powerful machinery became available: W. Barrett, 'Caribbean Sugar Production Standards', 154–5; M. Moreno Fraginals, *The Sugarmill: The Socioeconomic Complex of Sugar in Cuba 1760–1860* (New York, 1976), 112–14; Starkey, *Barbados*, 163.

¹⁷⁵ Penrhyn MSS, Lord Penrhyn to W. Fearon, 25 May 1807; D. Ewart to Lord Penrhyn, 6 Aug. 1807.

¹⁷⁶ Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834.

¹⁷⁷ Campbell, 'Work, Pregnancy', 808–9. The only reports on the incidence of miscarriages that have come to light imply that half the pregnancies on a Jamaican sugar estate ended in this way: Goulburn MSS, III/3H, T. Samson to H. Goulburn, 28 Apr. 1813, 11 Aug. 1815.

would have been to exempt completely all women of child-bearing age from the hardest work, but they were too important a part of the first gang for this to be feasible.¹⁷⁸ The planter who attempted a more discriminating approach, by giving relief to those who claimed to be with child before they had begun to 'show belly', was quickly disillusioned: 'Four women pretended to be pregnant at the beginning of Crop. They sat down the whole time, and immediately after it was over, they went to their work with no appearance of pregnancy.'¹⁷⁹ Before amelioration, seasonal undernourishment was perhaps an important cause of infertility, if the evidence on this point from the Thistlewood diaries can be accepted as representative. By the early nineteenth century women's diet had certainly improved, but most of the benefit this might have brought to their reproductive capacity was overlaid by the estates' labour needs.

Culture played some part in limiting births, but usually it worked together with material circumstances. There may have been some truth in the planters' claims that fertility was depressed through irregular mating (judged by European norms if not by European conduct) and through prolonged breastfeeding, practices which suggest African analogies. However, the demographic significance of such behaviour was determined to a large extent by the stresses of plantation life. Demoralization resulting from the white men's sexual interference, the slave women's desire to continue nursing as an escape from work, and contraception or abortion as responses to the state of bondage are obvious instances of this. Also, the relative weakness of the coresident nuclear family was clearly unhelpful for reproduction. British West Indian sugar planting, Jamaica's most of all, set the slaves travelling during the hours allowed to them by their masters away from estate work—travelling to markets, to outlying provision grounds and fishing spots, or in search of land crabs when they began to run after the spring rains. Thus unions were formed between men and women who belonged to different properties, partly by accident, but also as a means of gaining access to a wider range of resources. For example, where the

¹⁷⁸ Penrhyn MSS, S. Jeffries to Lord Penrhyn, 20 Apr. 1807.

¹⁷⁹ Clarendon MSS, Dep. c 359, Bundle 4, W. Ridgard to J. F. Barham, 30 Aug. 1825. For similar instances on another estate, see Goulburn MSS, III/3T, A. Bayley to H. Goulburn, 16 Mar. 1831.

land on a slave's own estate was poor or inconvenient, a partner on another property could offer a more rewarding ground for them to cultivate jointly.¹⁸⁰ Even in Barbados and the Leewards the slaves wandered, to supplement their allowances by collecting grass or firewood for sale in the towns, although the closer settlement of these small islands mitigated the depressing effects on the birth rate of inter-plantation mating.¹⁸¹

In the later nineteenth century Jamaica continued to be rather distinctive in this respect. Fertility here, although higher than before emancipation, still fell short of the levels reached in the eastern Caribbean, where sugar planting on the whole remained more resilient (Tables 16 and 17). The difference persisted partly through the attitude towards breeding that had been fostered by the exceptional severity of Jamaican slavery. It was also significant that in Jamaica the surviving sugar estates came to depend upon the recruitment over considerable distances of seasonal harvest migrants, male and female, plied with rum by the overseers and left to sleep as they chose in bothies or trash houses. Among missionaries and chapel elders the estates here were loathed as centres of drunkenness, fornication, and even pagan drumming, all deplorable influences on the newly established peasantry. In the smaller islands there was a greater chance that the sugar worker could return each night to the family hearth and so escape corruption.¹⁸² The planters could argue that their labourers' own ingrained habits had prevented amelioration from affecting the lists of births as much as deaths, but for these habits the planters themselves were ultimately responsible.

¹⁸⁰ Sheridan, *Doctors and Slaves*, 233; Papers in Explanation of Measures adopted for giving Effect to Abolition of Slavery Act (Jamaica), *Parl. Papers* 1836, xlviii (166), 282; Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770-1, fo. 63. Thistlewood spent most of his time in Jamaica on properties near the mouth of the Cabaritta River, a favourite place for fishing, and many of his slaves had mates on plantations several miles away. Higman, 'Slave Family', 265, 272-3, and *Slave Populations*, 369-70, cites records of church marriages which suggest that a high proportion of slave partners lived on the same or nearby estates, especially in Jamaica. However, only a small and probably unrepresentative minority of the slaves were ever formally united in this way.

¹⁸¹ Higman, *Slave Populations*, 369-73; Sturge and Harvey, *West Indies in 1837*, 64.

¹⁸² E. B. Underhill, *The West Indies: Their Social and Religious Condition* (1862), 259, 263, 353-4, 359, 424.

A Balance Sheet of Amelioration

AT this point an attempt will be made to evaluate the results for the plantation economy of the developments which have been examined over the last two chapters. Amelioration was a process of reform yielding more sugar at a lower cost to the labour force, as indicated by the balance between deaths and births. However, this general description covers wide local variations. Some estates, or colonies (Barbados, Antigua), or districts within colonies (coastal Jamaica), made more progress than others; the emphasis could fall more upon raising output, or lowering the rate of slave depletion. The extra output comprised sugar, rum, and food, in varying proportions. So clarity will be sought by concentrating upon Jamaica as the model, noting incidentally the main points of difference from Barbados and the Leewards, the other islands for which reasonably full information survives. The aim is to establish as precisely as possible the rate of improvement and its sources. Any numerical estimates purport to be no more than rough orders of magnitude.

In Jamaica between 1750 and 1830 the annual output of sugar and rum per slave attached to the sugar plantations increased by 40 per cent.¹ Over the same period the proportion of estate slaves who were active workers declined slightly, because of the growing numbers of the elderly and of creole infants, and the extra relief allowed to breeding women and young children (Table 24).²

¹ British Library Add. MS 12431, fos. 152-7, 'Sugar Plantations in Jamaica with the Quantity of Sugars made generally for Some Years past on them, Christmas 1739'; R. B. Sheridan, 'The Wealth of Jamaica in the Eighteenth Century', *Economic History Review*, 2nd Ser. xviii (1965), 303; Higman, *Jamaica*, 13-15, 21, 27, 41-2, 126, 235; Ragatz, *Statistics*, 20, 23; Craton, *Invisible Man*, 39. Annual production of muscovado sugar per plantation slave averaged 1,000 lbs. c.1750 and 1,400 lbs. c.1830. A little over 3 gallons of rum were made for each 100 lbs. of muscovado in both periods. It is assumed that the average capacity of a sugar hogshead was 1,600 lbs. in 1750 and 2,000 lbs. in 1830. Account is taken only of slaves permanently attached to sugar estates. A certain amount of hired labour was also used, mainly to dig cane holes, but its relative importance did not change over time.

² See above, 155-9 and Table 9.

TABLE 24. *Occupational Structure of Estate Slaves in the Eighteenth and Nineteenth Centuries (Weighted Averages)*

	Field (%)	Crafts (%)	Watch (%)	Domestic (%)	Aged, invalid (%)	Children not working (%)	Number of slaves in sample
<i>18th century</i>							
Barbados and Leeward Islands	↓ 66.9 → 60.1	↑ 5.2	3.4 ↓	3.7 ↑	8.0 ↑	12.8 ↓	1,578
Jamaica	↓ 67.8	↑ 6.6	6.1 ↓	5.5 ↑	6.0 ↑	8.0 ↑	2,020
New Colonies	59.9	7.3	3.3	5.5	12.1	11.9	454
<i>19th century</i>							
Barbados and Leeward Islands	60.1	7.1	2.6	5.5	14.8	9.9	1,378
Jamaica	59.6	7.9	5.3	7.1	8.6	11.5	2,998
New Colonies	65.9	7.1	2.8	5.0	7.3	11.9	1,707

Sources: Slave listings detailed in Appendix; Monson MSS, Thistlewood Diaries (Egypt, Jamaica, 1758-67); Bennett, *Bondsmen and Bishops*, 16, 73 (Codrington, Barbados, 1775); Dunn, 'Two Plantations', 52 (Mesopotamia, Jamaica, 1809); Tudway MSS, Box 14, Monthly Journals of Plantation Works (Parham, Antigua, 1823); Higman, *Slave Populations*, 186 (Peruvian Vale, St Vincent, 1807-8).

Also the hours of attendance per year required from each worker fell by 10 per cent, as double spell succeeded long spell at the boiling house, improved pastures displaced the evening grass throwing, and extra days were left free to cultivate the provision grounds.³ Thus the hourly productivity of labour employed in Jamaican sugar planting rose by two-thirds. Local food production cannot be measured directly, but if it is assumed that in 1830 the output of the estate slaves' allotments was equal in value to a half of the sugar harvest, that the greater attention to root crops did no more than compensate for soil deterioration, and that the slaves increased their food production only to the extent that they were allowed more free time, then total output of sugar and food per slave increased by 35 per cent per annum, and by 60 per cent for each hour's labour.⁴ The overall performance of the smaller islands was similar. Planters on Barbados increased the production of sugar per slave threefold and that of food by a third, to judge from the scales of allowance. At the Parham estates on Antigua sugar consignments per slave grew by only 37 per cent, but food crops must have at least doubled. Against this, on the other Leeward Islands extra food growing was accompanied by sharp reductions in the export of sugar.⁵

How was this improvement in labour productivity achieved? Four main possibilities may be distinguished: (a) increases in complementary inputs of land and fixed capital, (b) greater efficiency in the use of inputs through technical change, (c) economies of scale, and (d) improvements in the quality of the labour force, perhaps through better health or accumulated experience. Of course, while it is easy to suggest distinctions of this kind, in practice attempts to 'partition' the sources of economic growth run into formidable difficulties.⁶ For example,

³ Assuming that the number of days per year spent on estate work was reduced from 300 to 287, that the normal day's labour out of crop was reduced from 12 to 11 hours (excluding meal breaks), that the sugar harvest occupied 20 weeks of the year, that long spell required 96 hours work per slave per week, and double spell 90 hours: Higman, *Slave Populations*, 179-88; and see above, 103-4, 112-14.

⁴ For food rations and crop values, see above, ch. 4 n. 159; Sheridan, *Doctors and Slaves*, 179; Higman, *Jamaica*, 235-6; G. Eisner, *Jamaica, 1830-1930: A Study in Economic Growth* (Manchester, 1961), 25.

⁵ See above, ch. 4.

⁶ Fogel and Engerman, *Time on the Cross*, i. ch. 6, ii. 126-51; E. F. Denison, *Why Growth Rates Differ: Postwar Experience in Nine Western Countries* (Washington, DC, 1967).

the steam engine as a technical innovation (*b*) was 'embodied' in a substantial outlay of fixed capital (*a*), and might depend upon an enlarged scale of operations (*c*), or more thoroughly trained workers (*d*). The four categories cannot be maintained consistently, and they are introduced here only to provide a loose analytical framework. For our purposes special interest attaches to point (*d*), which is likely to have been most closely affected by the course of amelioration. As before, discussion will centre upon Jamaica.

Estate inventories show a rather modest growth in fixed capital of 25 per cent per slave, valued at constant prices, over the century before emancipation.⁷ At the same time, however, land per slave certainly declined—'land' being understood to include soil quality and timber reserves. Much of the extra capital, for example artificial pastures and enlarged trash houses, was required to compensate for the depletion of natural resources.⁸ So on the whole it is unlikely that additional inputs accounted for much of the growth in productivity. Clearly a much greater contribution was made by technical innovations, such as Guinea grass, higher-yielding cane varieties, the clarifier, and the use of iron in millwork. Some of these affected the quality rather than the quantity of capital employed: thus a nineteenth-century cattle mill was more productive than its eighteenth-century equivalent by virtue of superior design, without being much more costly. Or inputs were organized and combined together more effectively, especially through long ratooning in Jamaica and the new crop rotations in Barbados and Antigua.

On the average Jamaican plantation about 1750 140 slaves produced 63 tons of sugar a year; in 1830 240 slaves produced 150 tons.⁹ Some of this increase in operating scale was required to accommodate the new methods and equipment whose results we have already considered, but to what extent did the estates become more efficient simply by virtue of being larger? During crop time at least twenty labourers—feeders, mule drivers, trash turners, stokers, boilers—were needed at the works to help with

⁷ Ward, 'Profitability', 203.

⁸ See above, 80-94.

⁹ Sheridan, 'Wealth of Jamaica', 303; Craton, *Invisible Man*, 48; Higman, *Jamaica*, 13-14.

processing the sugar. On smaller properties, where too large a part of the field gangs had to be recruited for these tasks, deliveries of canes might be insufficient to keep the mill grinding continuously, as Thistlewood discovered at Egypt when he tried to make sugar with a complement of less than 100 slaves.¹⁰ On most mid-eighteenth century properties it was only feasible, given the costs of supervision, to work the slaves in two gangs. Greater numbers allowed further subdivision, with individuals being better matched to the tasks in hand; the two- or three-spell system could replace the single spell during crop. Larger holdings were said to be more economical in their use of equipment and salaried white employees.¹¹

Nevertheless it is unlikely that economies of scale, as distinct from new techniques, had a considerable effect. After 1750 there was very little increase in the average number of slaves per estate in Barbados and the Leewards.¹² Even in Jamaica individual plantations were not enlarged very much in surface area, although the share of cultivated land did grow.¹³ The leading planters here continued to gain ground at the expense of their weaker neighbours, but new acquisitions were usually kept as separate holdings. Amalgamations became less common than during the first century of English settlement. There was a decline in the ratio of white men to slaves on the estates, but it occurred on all sizes of property and the scale effect seems to have been slight.¹⁴

Turning to possible improvements in labour quality, the demographic evidence shows that by 1830 slaves were better fed and healthier than in the eighteenth century. Creoles had come to outnumber Afrieans. There was also an increase in the

¹⁰ Monson MSS, Thistlewood Diaries, Jan.-July 1767.

¹¹ According to Long, *Jamaica*, i. 459, an estate with 300 slaves required 20% less outlay on buildings and livestock in proportion to its capacity than an estate with 100 slaves. The remarks on the advantages of large properties by Edwards, *West Indies*, ii. 287-8, are exaggerated and boastful.

¹² Sheridan, *Sugar and Slavery*, 144-6, 195; PRO, CO 442/2, Colonial Statistics 1833 (Antigua), 19; T. 71/1549, Barbados slave compensation claims.

¹³ F. W. Pitman, *The Development of the British West Indies, 1700-1763* (New Haven, 1917), 264-5; Edwards, *West Indies*, i. 247; Stewart, *Island of Jamaica*, 35; Craton, *Invisible Man*, 39; Higman, 'Jamaican Sugar Plantations', 26.

¹⁴ See below, ch. 6 n. 29. In Jamaica 1829-32 variations in production per slave between holdings of different sizes were very slight, although average-sized sugar estates may have had the lowest operating costs: Higman, *Jamaica*, 128, 221.

average stature of Jamaican-born slaves, presumably with some corresponding addition to their strength (Table 25).¹⁵

How did these changes, all of them more or less attributable to amelioration, affect labour productivity? For most estate operations it is impossible to distinguish the results of any change in the slaves' personal capacity from those of general developments in technique. However, methods of cane cutting hardly changed through our period, while the effectiveness of slaves in the field at crop time rose markedly. The information summarized in Fig. 11 shows that the daily output of manufactured sugar for each worker employed in cutting and tying canes roughly doubled. Deliveries of cut cane per field worker must also have increased to almost the same extent, for there was little change in extraction rates at the mills and boiling houses, and only a modest rise in the ratio of final output to cane weight.¹⁶ Much more of the growth in labour productivity

¹⁵ No comparable data on slave stature have been found for Barbados and the Leewards. According to the registration returns, among slaves aged 25-40 years imported into Trinidad from other eastern Caribbean sugar colonies until 1825 the average height of creole males was 166-7 cm., and of creole females 157-8 cm. These Creoles were taller than local Africans: Higman, 'Growth in Afro-Caribbean Slave Populations', 374-6. The sample of eastern Caribbean Creoles also seems to have been slightly taller than contemporary Jamaican creole runaways, but this difference cannot be regarded as significant. Individuals of above average height may have been selected for inter-island transfer. Also the Jamaican sample was not taken with the benefit of comprehensive age data of the kind available from the Trinidad registration returns, and probably includes a greater proportion of individuals who were not fully grown. For further discussion of slave heights and their interpretation, see Higman, *Slave Populations*, 280-92; D. Eltis, 'Nutritional Trends in Africa and the Americas: Heights of Africans, 1819-1839', *Journal of Interdisciplinary History*, xii, No. 3 (Winter 1982), 453-75; R. W. Fogel, *et al.*, 'Secular Changes in American and British Stature and Nutrition', *Journal of Interdisciplinary History*, xiv, No. 2 (Autumn 1983), 470-6.

¹⁶ Thomas Thistlewood noted that a 'load' of cut cane yielded 100 gallons of juice: Monson MSS, Thistlewood Diaries, 19 Mar. 1757, 12 Feb. 1760; see also Monson MSS 31/38, Diary of John Thistlewood, 21 and 24 Jan. 1765. He did not record the weight of this 'load', but a wain-load of corn, probably a close equivalent, totalled about 2,000 lbs.: Thistlewood Diaries, 20 July 1750, 18 Mar. 1751, 22 May 1759, 9 June 1769. A gallon of juice boiled down to about 1 lb. of sugar: Thistlewood Diaries, 19 Mar. 1757, 12 Feb. 1760, 18 Jan. 1774. Thus 100 lbs. of cane ultimately gave 5 lbs. of sugar. In 1790 William Beckford reckoned that 20 cart-loads of cane were needed to make a hogshead of sugar, which at his time averaged 1,800 lbs.: Beckford, *Island of Jamaica*, ii, 85, cited by Craton and Walvin, *Jamaican Plantation*, 122 n. 18. Later observations may indicate a slight increase in the ratio of sugar to cut cane and juice by the middle of the 19th century. According to T. Kerr, *A Practical Treatise on the Cultivation of the Sugar Cane* (1851), 74-5, 12-14 tons of cane gave 1,500 gallons of juice, to make a hogshead netting 15 cwt. in the English market. Losses through drainage and other causes on sugar consignments from

[See p. 197 for n. 16 cont.]

TABLE 25. *Average Heights (cms.) of Advertised Jamaican Runaway Slaves, 1813-1834*

	Males				Females			
	Creoles		Africans		Creoles		Africans	
	No.	Height Standard deviation	No.	Height Standard deviation	No.	Height Standard deviation	No.	Height Standard deviation
1813-14	344	160.1	557	162.7	6.8	133	152.0	5.4
1815-19	510	161.3	664	162.7	8.9	174	154.2	9.1
1820-4	527	162.7	439	162.7	9.7	177	155.1	6.3
1825-9	367	164.8	218	162.4	10.8	107	156.1	4.5
1830-4	610	165.2	236	161.7	10.9	236	156.0	15.1
							53	152.8
								7.4

Source: PRO, CO 141, *Royal Gazette* (Spanish Town, Jamaica): workhouse advertisements of captured runaways. The sample includes for the years 1813-14 the slaves advertised in the first surviving issue of each month, and for other years the slaves advertised in the first issue of Jan., Apr., July, and Oct. No issues for the years 1827-8 are available in this series. Readvertised slaves, those described as less than fully adult (e.g. 'boy', 'girl'), or as other than black (e.g. 'sambo', 'mulatto'), and Creoles born outside Jamaica have been excluded.

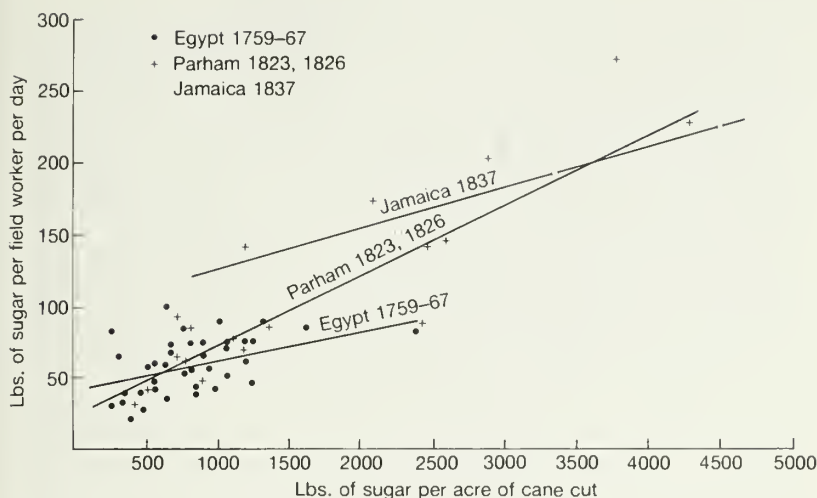


FIG. 11. Productivity of Harvest Field Labour, 1759-1837

Sources: Egypt: Monson MSS, Thistlewood Diaries, 1759, 1766-7; Parham: Tudway MSS, Box 14, Monthly Journals of Plantation Works, Old Work 1823, New Work 1826; Jamaica: *Parl. Papers* 1837-8, xlix (154.1), 42-82. It is assumed that in the 1830s the average capacity of a Jamaican sugar hogshead was 2,000 lbs.: Higman, *Jamaica*, 238.

should be attributed to better cultivation and augmented cropping rates: the harvesters' efficiency was always impaired when they were sent into fields which had suffered from drought or insufficient manuring. But even allowing for these points, a long-term improvement in performance can still be detected. Early nineteenth-century slaves cutting cane pieces that yielded 1,600-1,800 lbs. of manufactured sugar per acre (the contemporary average) were some 35 per cent more efficient than Egypt's

the West Indies to Great Britain ran at 5-10%: *Parl. Papers* 1842, xiii (479), QQ. 4795, 5217-18. A proposal made at about the same time for establishing a central mill in Jamaica assumed that 20 tons of cane gave 2,000 gallons of juice, and that 1,500 gallons of juice made a 16 cwt. hogshead: Fitzherbert MSS, W1/15. However, in 1843 another engineer thought that 100 gallons of juice still made only 1 cwt. of sugar: Hall, *Free Jamaica*, 72. On the whole it seems that improvements in mills and boiling equipment raised labour productivity and the speed of throughput more than the ratio of manufactured sugar to cut cane. The new cane varieties grew more luxuriantly than the old, but did not yield more sugar in proportion to their weight.

slaves had been when they worked equally productive land.¹⁷ There is no evidence for any major advance in the design or quality of hand-tools, so most of this difference must be attributed to greater physical strength and skill.¹⁸

In the eighteenth century planters acknowledged that hunger impaired working capacity. They complained too of the disruption caused by running away and theft. The Codrington estates in Barbados paid six or seven fees each year for the return of runaways from its population of about 250 slaves, yet by the 1820s the manager's correspondence 'made no mention of what had once been the most troublesome disciplinary problems'.¹⁹ On Antigua the Parham estates, with 500 slaves, averaged four such payments a year between 1771 and 1790, while in the 1820s their work journals do not record any runaways. The relevant heading in the printed forms was deleted and replaced by 'midwives and seamstresses'.²⁰ On Jamaica, however, the decline in running away seems to have been less marked. On Egypt plantations during the 1750s and 1760s Thistlewood recorded about twenty absences a year, half of these lasting no more than a single day, and a little less than a fifth beyond ten days. At any particular moment there was a roughly even chance that one of his hundred slaves would be missing. Inventories made of other properties on the island suggest similar rates of absenteeism, while official returns for the whole colony give 0.7 per cent of the slave population as runaways in 1818, and 0.6 per cent in 1834.²¹ Perhaps the habit of running away was

¹⁷ Averaging the Parham and Jamaica 1837 data, the daily output of manufactured sugar per field worker on land yielding 1,700 lbs. per acre was 55% higher in the early 19th century than at Egypt in the mid-18th century. But on the basis of the evidence reviewed in the previous note, I assume that over the intervening period the usual ratio of manufactured sugar to cut cane rose by 15%.

¹⁸ For nomenclature see Cassidy, *Jamaica Talk*, 79-80. Planters' correspondence does not indicate any important change in the quality of implements; e.g. no requests for new types of machete have been found in orders for estate supplies. The edge-tools used in European grain harvesting were not substantially improved until after 1830: E. J. T. Collins, 'Harvest Technology and Labour Supply in Britain, 1790-1870', *Economic History Review*, 2nd Ser. xxii (1969), 459. The productivity of modern cane cutters increases with their height: M. D. C. Immink, F. E. Viteri, and R. W. Helms, 'Energy Intake over the Life Cycle and Human Capital Formation in Guatemalan Sugar Cane Cutters', *Economic Development and Cultural Change*, xxx (1981-2), 359-61.

¹⁹ Bennett, *Bondsmen and Bishops*, 26, 105-6.

²⁰ Tudway MSS, Box 9, Parham plantation island accounts 1771-90; Box 14, Monthly Journals of Plantation Works 1823-9. Fees were paid for only a small proportion of runaways.

sustained in Jamaica by the island's geography, or the exceptional severity of labour conditions.

Theft continued to be seen as a slave characteristic. However, its share of punishable offences fell, and it became less immediately associated with hunger, as indicated by the reduced significance of cane breaking (Table 26). The stealing of corn is not distinguished in the early nineteenth-century sources. Also theft was an aspect of discipline where planters clearly felt able to relax their vigilance. From an early period laws were regularly passed prohibiting the slaves from dealing in fresh meat, to reduce the risk of depredations against the masters' own livestock.²² Nevertheless in early nineteenth-century Jamaica, at the Mesopotamia plantation, the slaves had 'an indulgence of

TABLE 26. *Categories of Offences for which Slaves received Punishment, 1754-1830 (%)*

	Insubor- dination, inadequate work	Running away	Cane breaking	Theft of corn	Other thefts	Other offences	Number of recorded punishments per slave per year ^a
Egypt, Jamaica 1754-67	42.6	20.9	9.1	5.3	5.3	17.1	0.41
Demerara/ Essequibo 1828-9 (all slaves)	79.3	4.3	0.2	—	5.4	10.8	0.31
Trinidad 1828-30 (all slaves)	59.1	14.2	1.1	—	7.4	18.2	0.14

^a At Egypt all recorded punishments included a flogging. In Demerara/Essequibo and Trinidad flogging was the usual punishment for men. However, no women here were recorded as having been flogged: they were punished by confinement in the stocks or by imprisonment. (The corporal punishment of females was prohibited in these Crown Colonies by Order in Council.)

Sources: Egypt: Monson MSS, Thistlewood Diaries; Demerara/Essequibo: Reports from Protectors of Slaves, PRO, CO 116/156; Trinidad: Reports from Protectors of Slaves, PRO, CO 300/24.

²¹ Monson MSS, Thistlewood Diaries; inventories of Dukensfield Hall, York, and Good Hope plantations, listed in Appendix; Higman, *Jamaica*, 178-81; Brathwaite, *Development of Creole Society*, 201-6.

²² Long, *Jamaica*, ii. 486.

keeping nearly a hundred head of horned stock amongst them'.²³ On Lord Penrhyn's property the confusion of negroes' stock running wild with the estate's was a considerable problem of management, as the attorney reported:

Whilst I was at the Estate a few days ago—I had the negro Stock shown to me and I proposed to buy several Bullkins and heifers, which the negroes readily agreed to and I paid them in Cash about £140. Money is more acceptable to them at this Period of the Year as they wish to lay it out in little matters of finery &c for Xmas. I proposed to the Negroes the regulation which I have adopted on other Properties and which I mentioned in a former letter to your Lordship viz—To purchase their Calves at a Doublon each when they are a twelvemonth old which they readily agreed to. I found several negroes had 4 or 5 Head of Stock and I expressed a wish that each negro should have but one, meaning that they should distribute them among their Children and relations or sell them to the Estate to which they readily agreed and several were transferred from one negro to another.²⁴

Robertson Gladstone, touring his father's Jamaican holdings in 1834, received groups of slaves enquiring whether they would be allowed to keep their stock on estate land after emancipation. In Thistlewood's experience only a very few of the slave élite, mainly coloured domestics, had been able to own cattle.²⁵

Eighteenth-century planters had tried to control theft by employing many of their best slaves to watch the growing crops. By the nineteenth century the proportion of watchmen had been reduced (Table 24). They came to be more exclusively the aged and decrepit, incapable of productive work, and less frequently assisted at periods of particular stress by privileged individuals. Indeed, skilled men who in the past had been cherished for confidential duties, and excused field work except as a degrading punishment, were now sometimes sent to cut cane at harvest time.²⁶

²³ Clarendon MSS, Dep. c 358, J. Blyth to J. F. Barham, 10 Oct. 1817.

²⁴ Penrhyn MSS, 1495, R. W. Fearon to Lord Penrhyn, 8 Dec. 1807.

²⁵ Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834; Monson MSS, Thistlewood Diaries, 21 Mar. 1758, 4 July 1767, 14 Aug. 1772.

²⁶ See above, 27–9; Craton, *Invisible Man*, 180–1, 187, 214–15; Higman, *Slave Populations*, 175–86; Dunn, 'Two Plantations', 39, 56. Most of the accounts of occupations on which Table 21 is based probably designate as watchmen only the individuals who were considered to perform this task regularly, throughout each year. But the annual average proportion of watchmen among Egypt's slaves under Thistlewood's management rises from 6 to 11% when temporary auxiliaries are included.

Even more valuable savings were made in the use of salaried white employees, often the heaviest single cost on an absentee-owned sugar plantation. A few had special skills—as distillers, ploughmen, or blacksmiths, for example—and so were liable to displacement when slaves were trained. Occasionally one or two derelicts were retained, usually as tenants on marginal land, merely to make up the ratio of white men to slaves required in the interests of security by the deficiency laws. But most white men employed by the estates were primarily supervisors. The overseer and bookkeepers were supposed to ensure that the drivers extracted a reasonable work rate from the field gangs, sit in the boiling house during crop, count out lumber for the carpenters, follow the wain-loads of sugar to the wharf, and watch the livestock being fed. In the 1750s three white servants were reckoned to be necessary for 100 slaves; by the nineteenth century this proportion had fallen to between one and two per hundred. The fines due for failure to comply with the deficiency laws were paid as a routine tax.²⁷ To some extent the adjustment was imposed upon planters by the difficulties in recruitment during the American and French wars.²⁸ Nevertheless they were able to hire fewer white people without serious loss of efficiency, apparently because of changes in the character of slave populations, for the supervisory function was little affected by economies of scale.²⁹

While physical punishment remained fundamental to discipline, the gradual softening of the old barbarities gives a further indication that the slaves were becoming more tractable. Extra allowances—which might be distributed or withheld at discretion—suggested new possibilities for inducing good behaviour. Thus in 1791 a Jamaican absentee proposed for his estates a scheme of weekly payments to each slave, liable to forfeiture in cases of misconduct, in the hope of ‘corporeal punishments rendered less necessary, by which health and strength are

²⁷ Monson MSS, Thistlewood Diaries, 18 June 1752; Craton, Walvin, and Wright, *Slavery*, 104; Dunn, ‘Two Plantations’, 37; Higman, *Jamaica*, 144; Craton and Walvin, *Jamaican Plantation*, 145.

²⁸ See above, ch. 3 n. 15.

²⁹ Thus in 1803 the 10 Jamaican estates belonging to John Tharp employed 3,002 slaves and 51 whites, a ratio of 1.7 whites per 100 slaves. This ratio averaged 2.1 on the 3 largest properties (with 490, 442, and 408 slaves each), and 1.5 on the three smallest (with 218, 112, and 67 slaves each): Tharp MSS, R.55.7.123.11: ‘Givings in for 28th Decb. 1803 of Negroes Stock & Whites.’

affected to a certain degree, and thereby infinite pleasure afforded to the humane'. About the same time a 'vagabond gang' was set up at Worthy Park, so that troublesome individuals could serve terms under special supervision. Lock-ups and dungeons appeared more frequently in estate inventories.³⁰ On a Grenada estate in the early nineteenth century the young slaves' minor transgressions were dealt with by taking half the offender's ration of salt fish, and giving it publicly to the elderly and infirm. The manager claimed that the procedure had obviated many whippings.³¹

Nevertheless this aspect of management still gave West Indian apologists great difficulty. Roughley wrote with some coyness that the driver of the principal field gang ought to be an 'athletic man, sound and hardy in constitution', carrying a 'short-handled, tangible whip'.³² Dr Williamson admitted that the whip was still necessary, although it should be confined to the most serious crimes, for experience showed that those who whipped least had the best-governed gangs. In particular, the withdrawal of privileges and solitary confinement were the best punishments for runaways, there should be no unsupervised floggings by drivers in the field, and as too frequent whipping deadens the senses, no more than thirty-nine lashes should be given at a time. Yet despite the weight of medical opinion, 'this limitation is often outdone . . .'. The cracking of the whip, as a signal for turn-out and warning, was a 'frightful sound which meets our ears every minute, in passing through estates . . .'.³³

So the reforms of slavery proposed by the British government in 1823 included restrictions on corporal punishment. The flogging of women was to be stopped completely, while for men it should be discontinued as an incentive to labour in the field, and given always under the supervision of an overseer, no more than

³⁰ Dickenson MSS, DD/DN 264, Caleb Dickenson to T. S. Salmon, 25 Apr. 1791; Craton and Walvin, *Jamaican Plantation*, 138; Stirling of Keir MSS, T-SK 21/3, inventory of Hampden estate 1770; Fitzherbert MSS, WI/17, R. Gill to W. Fitzherbert, 23 Apr. 1781; Tudway MSS, plans of Parham estate 1817-1819.

³¹ Home of Wedderburn MSS, GD 267 5/7, J. Fairbairn to G. Home, 16 Apr. 1817.

³² Roughley, *Jamaica Planter's Guide*, 79-80. Nineteenth-century estate inventories show that most drivers were aged between 25 and 45, although West Indian propaganda described them as grey-haired old gentlemen, swapping jokes with their gangs, and carrying a whip 'only as a custom of former times': A. Barclay, *A Practical View of the Present State of Slavery in the West Indies* (1826), 39-41.

³³ Williamson, *Observations*, ii. 221-4.

thirty-nine lashes at a time. The practical results of this scheme seem to have been negligible, although individual proprietors may have tried to modify their practice. De la Beche in 1825 claimed that on his Jamaican estate the driver no longer carried a whip, and rang a handbell to rouse the workers in the morning. Only the overseer could order punishments, each one to be diligently recorded in a monthly return made to the proprietor in England. But he also admitted that elsewhere drivers still sported whips, and that the flogging of women continued, even if it was 'not now very common'. Very few examples of the punishment records which he mentions have come to light.³⁴

In 1827 Henry Goulburn's Jamaican attorney conceded that the only important alteration he had made to discipline was the replacement of the whip by the switch and solitary confinement as means of punishing women. On the Wildman estates the manager abolished flogging for women and reduced it to a minimum for men, yet found that productivity fell to unacceptable levels. Sir Henry Fitzherbert banished the whip from the field while visiting his Barbados property in 1825, and a year later the decree remained in force, despite the manager's grumbles. But a similar experiment by the Society for the Propagation of the Gospel was abandoned after complaints of lax discipline, and resumed in 1829 only because of disquiet among Society members in England. The truculent reaction of the Barbados Assembly to the amelioration proposals from London suggests that putting them into effect would have required a marked change in local practice. The only regulation imposed on flogging in the colony's amended slave code of 1826 was that the indecent exposure of a woman's body should be avoided.³⁵ Women made up so large a proportion of the field labour force

³⁴ De la Beche, *Negroes in Jamaica*, 18, 32, 36. For Canning's amelioration proposals see C. Levy, 'Barbados: The Last Years of Slavery, 1823-1833', *Journal of Negro History*, xlv (1959), 310-16. No records of punishments are known to survive from Jamaica, Barbados, or the Leewards. Punishment books, kept to be officially registered according to local law, have been found among the papers of some British Guiana estates: Gladstone MSS CH 172; B. Bush, 'Towards Emancipation: Slave Women and Resistance to Coercive Labour Regimes in the British West Indian Colonies, 1790-1838', in D. Richardson (ed.), *Abolition and Its Aftermath: The Historical Context, 1790-1916* (1985), 35-6. However, the regulations of this Crown Colony were not matched in any of the older islands.

³⁵ Goulburn MSS, III/3, A. Bayley to H. Goulburn, 29 Sept. 1827; Report from the Select Committee . . . upon . . . the Extinction of Slavery . . ., *Parl. Papers* 1831-2, xx (721), QQ. 65, 184; Fitzherbert MSS, WI/17, R. A. Alleyne to H. Fitzherbert, 3 Aug. 1826; Bennett, *Bondsmen and Bishops*, 116, 121; Levy, 'Barbados', 318.

that very few planters were prepared to accept any real control on the use of the whip against them.

Nevertheless there were signs, recognized even by some of slavery's critics, that at least over the long term corporal punishment was becoming rather less frequent and brutal.³⁶ Vice-Admiral Fleming visited Jamaica in 1797 and again thirty years later. He believed that while there had been no general improvement during the intervening period either of feeding or the work regime, 'punishment is not so general. . . . On many estates the use of the cart whip is totally given up.'³⁷ William Taylor, arguing from experience that the whip was essential for slave management, knew properties where it was not used for months at a time, 'but that disuse of the whip had been produced by the use of it'. A newly appointed overseer might have to flog 'most freely and strongly' while establishing his authority. Then once this had been done, if he was a man of 'judgement and humanity', 'formal punishment' could become very rare.³⁸ Thistlewood probably had 'judgement and humanity', by the standards of the mid eighteenth century, yet he never dispensed with the whip: towards the end of his time at Egypt he was still ordering four or five floggings a month.³⁹

Early slave codes authorized mutilation in the case of serious crimes, especially long-term running away, and sometimes these provisions were put into effect, although usually the last resort against the incorrigible was sale to another colony (to North America or, most formidable of all, the planters believed, to the Spanish).⁴⁰ In 1759 the attorney of a turbulent estate in western Jamaica casually informed his employer that one runaway had lost a leg and another a hand. An inventory made for another

³⁶ However, flogging possibly increased on Jamaica immediately before emancipation: see below, Table 34.

³⁷ *Parl. Papers* 1831-2, xx (721), Q. 2518. He may have meant that the less damaging cat-o'-nine-tails had been substituted for the whip.

³⁸ *Ibid.* QQ. 67, 511-12.

³⁹ The floggings recorded by Thistlewood correspond to the 'formal punishment' discussed by Taylor, in which the overseer, 'according to the expression, laid a man down and punished him . . .'. Apart from this, all of the drivers under Thistlewood's command, and many in Taylor's time, about 1830, were allowed to inflict lesser penalties at discretion in the field.

⁴⁰ E. V. Goveia, *The West Indian Slave Laws of the Eighteenth Century* (1970), 23; Codrington (Antigua) MSS, C6, C. Codrington to S. Redhead, 30 Nov. 1752. Only one of Thistlewood's slaves ever suffered mutilation as a punishment, by having an ear cut off: Monson MSS, Thistlewood Diaries, 9 Mar. 1765.

property in 1780 described a young bricklayer as having had one of his legs taken off for theft.⁴¹ But by this time most masters found dismembering a distasteful practice, and it was prohibited by law in the main sugar colonies from the 1780s.⁴²

Thistlewood routinely branded all his slaves on the shoulder with a mark that identified their estate, Africans when they were bought, and Creoles at 5 years old. Sometimes he marked particularly troublesome individuals on the face as well. Yet in 1732 the Barbados estate of the Society for the Propagation of the Gospel had stopped burning the letters SOCIETY on the chests of its new negroes, 'a thing noted to be done only by the severest Masters or to the worst of slaves; and . . . very discouraging to those poor Creatures'. In the 1790s Edwards noticed apologetically that Jamaica continued with branding, 'but it is growing into disuse, and I believe in the Windward Islands [i.e. the eastern Caribbean] thought altogether unnecessary'. De la Beche in 1825 claimed that even Jamaicans had now stopped the 'disgraceful practice': only five of his 200 slaves had been marked, 'two eighteen years ago, and three I am sorry to say in 1822 or 1823. They were it is true bad characters, but nothing in my opinion can excuse such an abominable practice.'⁴³ In the early 1820s rather less than half of the runaways advertised by Jamaican workhouses were described as brand-marked, even though many of these slaves must have been persistent offenders, branded as a special punishment (Table 27). Nearly all of their marks were on the back or shoulder; branding on the face or chest was now very rare. However, most of the subsequent rapid decline in references to brand marking probably occurred through concern for metropolitan critics. The runaway advertisements with their unsavoury details were taking a conspicuous place in anti-slavery literature.⁴⁴

⁴¹ Fitzherbert MSS, W1/3, M. Laing to Mrs Perrin, 11 Sept. 1759; PRO, C. 107/ 143 (Chancery Masters' Exhibits), inventory of Drax Hall plantation, Jamaica, 1780.

⁴² Goveia, *West Indian Slave Laws*, 23.

⁴³ Monson MSS, Thistlewood Diaries, 7 Aug. 1755, 30 May 1757, 14 Aug. 1758, 30 May 1764; Bennett, *Bondsmen and Bishops*, 27; Edwards, *West Indies*, ii. 54; de la Beche, *Negroes in Jamaica*, 15, 26.

⁴⁴ R. Bickell, *The West Indies as they are; Or a Real Picture of Slavery; but more particularly as it exists in the Island of Jamaica* (1825), 37-47. One colonist considered that, 'in the present times when we have the prejudices of the world to contend with, and ought therefore to pay some attention to *appearances*, it would certainly be as well if these local lists [of runaways], instead of being *embodied* in the public papers, were published on a separate

TABLE 27. *Proportions of Advertised Jamaican Runaway Slaves Described as Brand Marked, 1813-1834 (%)*

	Males		Females	
	Creoles	Africans	Creoles	Africans
1813-14	37	52	37	48
1815-19	39	53	34	47
1820-4	36	49	36	49
1825-9	27	49	28	36
1830-4	14	28	7	13

Source: As for Table 25.

We may now try to summarize the economic consequences of amelioration. Between 1750 and 1830 the productivity of slaves committed to sugar planting in the older British West Indian colonies increased by about 35 per cent, so that most proprietors could still achieve a tolerable return on estate capital, despite the sharp deterioration in their terms of trade. Much of the efficiency gains can be attributed to particular technical innovations—the clarifier, the plough, improved mills, Otaheite cane, Guinea grass—but better treatment for the labour force must also have made a useful contribution. To begin with the details which can be most precisely measured, amelioration required extra medical care, clothing, and purchased fish, but these outlays were offset by lower depletion rates and supervision costs (Table 28). Even in Jamaica, with its relatively modest demographic improvement, there was probably a net saving, when allowance is made for long-term price changes. In Barbados and the Leewards, where enlarged local food crops displaced purchased corn, the balance of advantage from the new pattern of expenditure is quite decisive.

Apart from the items with a regular place in the planter's accounts, lower rates of depletion increased the number of young children, breeding women, and the elderly, all groups with little immediate value to an estate. On the other hand,

slip': *Royal Gazette* (Spanish Town, Jamaica), 15 Nov. 1823, 24. His scheme was not adopted. Branding was however prohibited by the revised Jamaican slave code of 1826.

TABLE 28. *Estate Expenditure on Slave Maintenance and Supervision, c.1750-c.1830 (£s per Slave)*

	Depreciation (natural decrease)	Payments to white employees	Purchased food	Clothing	Medical care	Total
<i>Barbados</i>						
c1750 (current prices)	1.05	1.50	0.43	0.20	0.10	3.28
c1830 (current prices)	-0.40 ^a	2.00	0.30	0.40	0.30	2.60
c1830 (1750 prices)	-0.35 ^a	1.00	0.20	0.50	0.15	1.50
<i>Leeward Islands</i>						
c1750 (current prices)	1.05	1.50	1.03	0.20	0.10	3.88
c1830 (current prices)	—	2.00	0.80	0.45	0.30	3.55
c1830 (1750 prices)	—	1.00	0.50	0.56	0.15	2.21
<i>Jamaica</i>						
c1750 (current prices)	1.05	1.50	0.15	0.15	0.10	2.95
c1830 (current prices)	0.20	2.00	0.50	0.45	0.30	3.45
c1830 (1750 prices)	0.18	1.00	0.40	0.56	0.15	2.29

^a Natural increase.

Sources: See above, ch. 2 nn. 27-8; chs. 3, 5, *passim*; Tables 2, 7, 19.

although the proportion of active slaves fell, individual workers became stronger, creole rather than Africans, more experienced, and less likely to be punished, to run away, or to steal. According to property valuations, a Creole was typically worth 20 per cent more than an African of similar age and occupation, so that the increase in the share of unproductive groups within estate populations, from roughly a quarter in the later eighteenth century to a third in the 1820s (Table 24), was fully compensated by the decline in the proportion of Africans from 65 per cent to less than 30 per cent over the same period.⁴⁵ Also this compositional arithmetic takes no account of the rising average quality

⁴⁵ Ward, 'Profitability', 202. Information about slave values has been taken from the inventories listed in the Appendix.

of the various categories, considered separately. A nineteenth-century Creole was likely to be more useful than an eighteenth-century Creole, a nineteenth-century African more useful than an eighteenth-century African, because the slaves of the later period were less frequently exposed to episodes of malnutrition,⁴⁶ incapacitated by whippings,⁴⁷ or absent as runaways.

Experience showed that a better-fed, self-reproducing labour force was superior in efficiency to contingents of half-starved Africans.⁴⁸ Why then had the early planters developed such an extraordinarily harsh regime? Why were there no considerable attempts to improve it before the 1770s or 1780s? One suggestion is that the treatment of slaves progressed through a sequence of more or less calculated responses to changing circumstances. During the first half of the eighteenth century, with a buoyant sugar market and an assured supply of new slaves, hard driving seemed most profitable. Then this strategy was discredited by commercial competition from the Ceded Islands, by the American war, and, shortly afterwards, by the start of the campaign against the slave-trade. From the later 1780s it seemed likely that sooner or later further deliveries from Africa would be prohibited. Amelioration served as a response both to the immediate problem of the slaves' reproduction and to the challenge against the legitimacy of slavery itself. In general, West Indian prosperity fostered greed and cruelty, while misfortune brought moderation and restraint.⁴⁹

Estate correspondence certainly shows an acute sensitivity to the accumulation of external pressures. On the other hand we

⁴⁶ For reduced efficiency as a result of insufficient food see above, 23-9; Tudway MSS, Box 15, M. S. Walrond to C. Tudway, 9 Oct. 1781; Penrhyn MSS, 1527, J. Shand to G. H. D. Pennant, 26 Oct. 1814, discussing a recent time of scarcity: 'Hardly in any situation were they [the slaves] equal to the performance of the usual labour.'

⁴⁷ During the 1760s a quarter of the slaves flogged on Thistlewood's orders were allowed a period of recuperation in the estate hospital. On 9 July 1755 he noted: 'London's disease is vermin, where he was whipp'd.' For maggots infesting a slave's wounds after punishment, see Pinckard, *Notes*, ii. 52.

⁴⁸ After 1808 British planters claimed that, because they had to meet the costs of raising children from birth to maturity, they were at a serious disadvantage in competition with foreign colonies where the African slave-trade continued. Whether or not these assertions were sincere, the detailed costings offered in support are unconvincing. Specified maintenance expenses exceeded those appearing in estate records, and no account was taken of a child's labour, significant in value from age 6: Sheridan, "Sweet Malefactor".

⁴⁹ Sheridan, *Sugar and Slavery*, 241-5; Sheridan, 'Africa and the Caribbean'; Higman, 'Slavery and the Development of Demographic Theory', 168-9.

have already seen how improbable it is that the heavy depletion rates of the early eighteenth century had been sought deliberately, in the belief that it was 'better to buy than breed'.⁵⁰ Even at this time higher standards of care would probably have been repaid by the savings that they made possible in other operating expenses, as happened during amelioration. The structure of relative costs and prices did not differ radically between the two periods; nineteenth-century planters did not depend to any large extent on techniques of slave maintenance that had been quite unknown to their predecessors. Inoculation against smallpox and the food plants from the South Pacific, neither of great importance, were the only real novelties that became available to assist the task of keeping a slave alive.

Furthermore, there was no consistent relationship over the short or medium term between the main economic indicators and the course of amelioration. The enhanced concern with standards of treatment that first appears during the early 1760s does coincide with an increase in slave prices relative to that of sugar, which would be likely to make breeding seem more advantageous.⁵¹ Nevertheless, through the 1770s and 1780s the prices received by planters for their sugar moved ahead more rapidly than the cost of new slaves, yet the reform of management gathered momentum, even before the anti-slavery movement had begun to give cause for concern (Table 29).⁵² The effects from the rate of profit are equally unclear. It was depressed during and immediately after the American War of Independence, a decisive phase of innovation, but then returned to customary levels for a further thirty years. In the 1790s renewed opportunities for money-making may to some extent have distracted Jamaican planters from the issue of slave maintenance, but there is no evidence that this happened elsewhere. The revenue decline suffered by Barbados in the early eighteenth century fostered a special harshness rather

⁵⁰ See above, 29-37.

⁵¹ For concern at increased slave prices see Tudway MSS, Box 15, F. Farley to C. Tudway, 20 Mar. 1760; Grainger, *Essay*, p. iii.

⁵² Although anti-slavery doctrine was gaining strength from the 1760s, for most planters it was not a source of anxiety until the start of the public campaign against the slave-trade in 1787: R. Anstey, *Atlantic Slave Trade*, 239-54; Bennett, *Bondsmen and Bishops*, 89-94; Vassall MSS, W. Vassall to J. Wedderburn, 5 Dec. 1787, 16 Jan., 30 Apr. 1788; Slebech MSS, 9096, T. Hibbert to N. Phillips, 5 Mar. 1788; Stapleton-Cotton MSS, Bundle 18, W. Nisbet to Lady Stapleton, 23 May 1788.

TABLE 29. *Average Prices of Sugar and Slaves, 1673-1807*

	Barbados, Leeward Islands			Jamaica		
	Sugar price ^a (£s per cwt.) (1)	Slave price ^b (£s) (2)	(2)/(1) (3)	Sugar price ^a (£s per cwt.) (4)	Slave price ^b (£s) (5)	(5)/(4) (6)
1673-88	0.65	18	27.7	n.d.	n.d.	n.d.
1689-1701	1.21	25	20.7	n.d.	n.d.	n.d.
1702-13	1.04	26	25.0	n.d.	n.d.	n.d.
1714-38	0.78	23	29.5	n.d.	n.d.	n.d.
1739-48	0.89	26	29.2	n.d.	n.d.	n.d.
1749-62	1.14	29	25.4	1.05	36	34.3
1763-75	1.16	39	33.7	1.13	42	37.2
1776-82	1.62	41	25.3	1.66	44	26.5
1783-91	1.54	42	27.3	1.50	48	32.0
1792-8	2.20	55	25.0	2.08	55	26.4
1799-1807	1.72	70	40.7	1.64	70	42.7

^a London price of muscovado sugar, net of duty and of marketing and shipping costs.

^b Price paid in the West Indies for a newly imported adult male African. Galenson's data for men sold in the first half of auctions by the Royal African Company are used to cover the years 1673-1723. The quality of these men was above average, and they were bought mainly by the wealthiest planters. Their sale details are therefore most closely comparable with later observations, which come mainly from the records of absentee-owned sugar estates.

Sources: Plantation accounts; above, Fig. 3; K. G. Davies, *The Royal African Company* (1957), 365-6; D. W. Galenson, 'The Atlantic Slave Trade and the Barbados Market, 1673-1723', *Journal of Economic History*, xlii (1982), 497-503; Bennett, *Bondsmen and Bishops*, 49-51; Ward, 'Profitability', 199-200.

than humanity.⁵³ It seems, therefore, that any simple business reasoning must have been complicated by a wider range of influences.

When Admiral Lord Rodney testified to the Privy Council inquiry on the slave-trade of 1789 he dated the improvements made to conditions on Barbados from the temporary British capture of Martinique in 1762 during the Seven Years War. Many Barbados planters took the opportunity to visit the French colony, and in consequence of what they saw began to give more clothing to their slaves, who previously had often been left completely naked.⁵⁴ After 1763 the acquisition of the Ceded Islands—Grenada and Dominica were already extensively settled—gave further opportunities to observe French practice. International differences between slave systems became a

⁵³ See above, 13-14, 22.

⁵⁴ Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, 'Further Evidence ... respecting the Treatment of Slaves ...', Lord Rodney.

favourite theme among writers on the West Indies, and at least until the Saint-Domingue insurrection of 1791 comparisons were almost wholly to the disadvantage of the British. The French slave, it was alleged, probably lived on a modest-sized estate, under the care of a resident owner who kept free from any heavy burden of debt. British plantations were larger, built on an elaborate structure of commercial credit, and subject to the abuses of salaried management under absentee ownership. Being better fed, the French slave could work much harder than the British.⁵⁵ While a liberal constitution left British colonists to treat their property as they chose, the legal code promulgated by an absolute monarchy restrained the worst abuses on the French islands:

The protection of the magistrate renders the slave less contemptible in the eyes of his master, who is thereby induced to consider him with more regard, and to treat him with more gentleness. Gentle usage renders the slave not only more faithful but more intelligent, and therefore, upon a double account, more useful.⁵⁶

In the time of war no French Negroes ever run away from their Masters to come to us so well are they treated in those Islands. . . . The French negroes are instructed in Religion, and are extremely Honest. Even their Store Houses are not guarded against thieves whereas our negroes in Bridge Town steal the very glasses out of the windows.⁵⁷

Humanity might therefore be the best policy.

Whether or not these opinions were accurate, they became widely held and influential.⁵⁸ The French colonies impressed by their ability to deliver sugar to Europe more cheaply than the British, and for a while they escaped large-scale slave revolts of the kind that occurred in Jamaica during the 1760s. This was an

⁵⁵ [Dr Collins], *Practical Rules for the Management and Medical Treatment of Negro Slaves in the Sugar Colonies* (1803), 79–80, cited Sheridan, *Doctors and Slaves*, 178.

⁵⁶ Smith, *Wealth of Nations*, bk. iv, ch. 7, pt. II.

⁵⁷ Fitzherbert MSS, Barbados Diary of William Fitzherbert 1770–1, fos. 49, 59.

⁵⁸ Modern research gives a bleak impression of slavery in the French West Indies, although some attempts were made to improve treatment in the later 18th century: Debien, *Les Esclaves*. More systematic comparative work would be required to establish how conditions here differed from those in the British islands. Probably any points in favour of the French as slaveowners were largely confined to their Windward colonies. In the sugar-planting districts of Saint-Domingue absenteeism, indebtedness, and heavy mortality were as conspicuous as in the British Caribbean: D. Geggus, *Slavery, War and Revolution: The British Occupation of Saint Domingue* (Oxford, 1981), 7–12, 24–6. However, even Saint-Domingue's slaves were 'remarkably unrebelling' before 1791: *ibid.* 27.

acutely sensitive topic for Edward Long, who required several pages to explain how Jamaica's disorders resulted not from any unusual severity, but from the martial spirit of recently imported Africans, especially the 'Coromantees' of the Gold Coast favoured by many British planters.⁵⁹ Yet he still had to admit grudgingly that Catholic ritual might have some appeal to the pagan mind, and that legal regulation could be useful to restrain abuses by overseers. So, to increase Jamaica's security, and planters' profits, Long stressed the need for progressive agriculture, more sensitive to local geography, and saving labour as much as possible, for example through the use of the plough. Irrigation might be developed, imitating the French. The development of crops other than sugar offered the basis for settlement by white smallholders. Reduced slave mortality would end the heavy annual outlays hitherto required to keep up the stock, and replace savage Africans with less dangerous Creoles.⁶⁰

With their moral complacency shaken by the French example, or reputation, British planters were faced with the crisis of the American War of Independence. Through improvisation or good fortune most slave holdings were maintained quite successfully, and by the mid-1780s the costs of imported food and other items were no higher, relative to the price of sugar, than ten years before. In strict accounting terms it might have seemed appropriate to restore the cultivation methods which had proved useful in the past, as happened after earlier wartime emergencies, and as many conservatives would still have wished.⁶¹ Instead a sufficient number of planters persisted with reform, improving the condition of their slaves and livestock to the point at which the benefits were quite beyond dispute. Current income was sacrificed for the sake of long-term advantage, in a way that had previously seemed quite impossible for societies so completely obsessed with the state of the next harvest. Proprietors acquiesced to year after year of inflated expenses, even while revenue was seriously curtailed.⁶²

Much of this new forbearance was learnt through dire necessity. If imported supplies were no longer available, food had to

⁵⁹ Long, *Jamaica*, ii. 404-504.

⁶⁰ *Ibid.* i. 375-454, 511.

⁶¹ See above, ch. 4 n. 13.

⁶² See e.g. Fitzherbert MSS, W1/17, accounts and correspondence of Turners Hall plantation; Starkey, *Barbados*, 100-7; above, Table 3.

be raised locally, whatever the cost: 'We do not now feel so much the apprehension of a short crop as we used to do, but think more of the danger of loosing our negroes and of course of being entirely ruined.'⁶³ The American War of Independence, and the French wars from 1793, were more protracted than earlier conflicts, lasting long enough for emergency measures to prove their permanent worth. Also the American war was particularly alarming because of its military reverses and accompanying sequence of hurricanes. Storms of such violence had not reached Jamaica since 1744; Barbados had last suffered a hurricane in 1731, so that its inhabitants came to believe that their situation 100 miles to the east of the main archipelago gave them some measure of immunity.⁶⁴ The long interval had bred careless habits, for example in the dependence upon plantains as a diet for the slaves, while comprehensive destruction gave a sense of catharsis and new beginnings. On Barbados after the hurricane of 1780 the air seemed clearer, the inhabitants in better health, and the canefields free of the black blast. Houses were rebuilt to new designs, without the lofty gable ends which had become established as the local style. Planters who for years had struggled on from one harvest to the next without the will to make even piecemeal adjustments took the opportunity for a clean break with worn-out routines.⁶⁵ 'It thus appears that the wholesome pressure of circumstances, which, to the superficial observer, foreboded nothing less than the ruin of the colony . . . occasioned the introduction of a more rational system of agriculture . . .'⁶⁶

Misfortune had such a salutary effect partly because it coincided with changes in the composition of the planter class. Up to the middle of the century many leading West Indians were still pioneers by experience and temperament, gentlemen of the old school, as Thistlewood discovered:

[13 May 1750] To Day old Mr Jackson din'd with us. He is accounted a very honest Man, and worth 8 or 10 Thousand Pounds, yet goes without Stockings or Shoes. Check Shirt, coarse Jacket, Oznabrig Trowsers, sorry Hat. Wears his own hair.

⁶³ Tudway MSS, Box 15, M. S. Walrond to C. Tudway, 29 Dec. 1775.

⁶⁴ Edwards, *West Indies*, i. 234; Senhouse MSS, Memoirs of Joseph Senhouse, vol. iii, fo. 47.

⁶⁵ Senhouse MSS, Memoirs, vol. iii, fos. 327-33.

⁶⁶ Sturge and Harvey, *West Indies in 1837*, 153.

[19 March 1753] This morning old Tom Williams called and made his observations as usual. He once killed a negro girl of his own that had got a looseness, stopping her a[nus] with a corn stick. And one of the girls cleaning the hall when he thought it did not much want it, he shit in it, and told her there was something for her to clean. Frequently at home wears nothing but a shirt and shows himself with the fore loose before his daughters.

Succeeding generations were expensively educated, more fastidious, and conscious of new humanitarian values. Also as time passed sugar plantations came to be held together with other, less precarious sources of wealth. West Indian profits were used to acquire British landed estates or government stock; West Indian heirs and heiresses intermarried with other elements of metropolitan society. Diversified investments made the current state of remittances from across the Atlantic seem a little less urgent.

When Joseph Foster Barham⁶⁷ succeeded to the ownership of a Jamaican plantation in 1750, 'impressed with the sacred duty incumbent on him with regard to his slaves', he travelled out from England to view his inheritance, accompanied by a tutor, the Revd George Downing. Barham installed two Moravian missionaries and left the estate in the care of another clergyman, under instructions to make humanity his first concern. But purchasing was still required to maintain the slaves' numbers, and despite conversations with critics of the African trade, the proprietor and his friends were not convinced that it should be abolished. 'They satisfied themselves by saying that slavery had existed in all ages. They admitted it to be an evil but regarded it as a divine dispensation.' So it fell upon Barham's son, inheriting in 1789, to add the order that no new Africans should be bought, 'a directive overlooked by a better man, but which I owed partly to some disgusting scenes I had witnessed and partly to the superior views which had been communicated to the world'.⁶⁸

⁶⁷ Joseph Foster Barham (1729–89). His grandfather, Colonel Thomas Foster, was reputed to have served as an officer in the 1655 expedition to Jamaica, subsequently establishing himself as a planter on Island estate in the parish of St Elizabeth. The object of Barham's Jamaican visit was Mesopotamia plantation, in the adjacent Westmoreland parish. He acquired this property from his stepfather, and married the heiress to a Pembroke-shire estate. He was educated at Eton, and travelled abroad with Lords North and Dartmouth: Clarendon MSS; F. F. Barham, *The Foster Barham Genealogy* (1844), 6–7, 15.

⁶⁸ Clarendon MSS, Dep. c 375, memoranda of Joseph Foster Barham (1759–1832) on West Indian affairs, c.1825.

In 1771 the young William Fitzherbert sailed to Barbados, also with a clerical tutor, for an inspection of his family's estate there. He was distressed by what he saw: a Guinea ship lying at anchor with its cargo, half-naked slave women ('the most disgusting objects in the world after the age of 12 or 14 for they very soon grow old'), a field gang returning from work, 'followed by the Driver with a long whip in his Hand, and just like the Prints of Monkeys with their young ones one sees the poor women with their children at their backs, who all the little creatures as if by Instinct pay their obeisance to their Master'. For the white children, with slaves at command from earliest infancy, 'the system of education here is very Different from that which Rousseau recommends'.⁶⁹

A year later Fitzherbert inherited the Barbados property (his father committed suicide by hanging himself in a stable), and he returned to the island following the great hurricane of 1780 as an enthusiastic reformer. To ease the slaves' labour extra food was grown and mules bought. 'Perhaps only 20 acres will be planted every year instead of 50 or 60 by which holing and dunging will be saved.' The manager should be a comfortable, middle-aged man, not out to get a great reputation for the volume of his consignments. 'I don't know whether warmth of temper will have passed away with the time of growth, but there may not be that vanity and Desire of being distinguished so common to young Men. I am willing to give up something to the ease of my Negroes, and do not wish to push matters. . . . Moderate Crops will satisfy me.'⁷⁰ In the event he and his heirs were rewarded both by a reduced rate of loss among their slaves and by better crops, but this second benefit was quite unanticipated.⁷¹ Amelioration depended only in part upon systematic calculation. Planters were also led by accident towards a better understanding of their own interests.

So far we have examined amelioration primarily as a technical exercise, which on balance helped the planters' adjustment to

⁶⁹ Fitzherbert MSS, Barbados Diary 1770-1 of William Fitzherbert (1748-91), fos. 32-4. His grandfather had married the heiress of the Barbados planter Thomas Alleyne. The Fitzherberts of Tissington were a long-established Derbyshire landowning family: Namier and Brooke, *History of Parliament*, ii. 428-30.

⁷⁰ Fitzherbert MSS, W1/17, 'M. S. relative to Turners Hall' 1784.

⁷¹ Fitzherbert MSS, W1/17, accounts of Turners Hall 1771-1834.

commercial competition. However, the process had other, less tangible results, especially as it entailed the replacement of Africans by Creoles within colonial populations. Although Creoles may have been more robust, skilful, and productive than imported slaves, through experience of estate life they were likely to develop distinctive attitudes, not necessarily helpful to their masters over the long term. From an early date colonists had debated the likely consequences of creolization for the viability of island society, and at least by the 1760s majority opinion considered them to be favourable. Locally born slaves, accustomed since childhood to the demands of the plantation economy, seemed relatively submissive, while Africans constituted the runaway bands and mounted the principal rebellions. So these threats could be expected to recede as the number of Creoles increased, with the extension of the canefields and the loss of forest cover as further aids to good order. On Barbados and the Leewards no large-scale revolt had broken out since the turn of the century, and a growing sense of security in the slaves' acquiescence encouraged amelioration; meanwhile on Jamaica and the Ceded Islands, areas of more recent settlement, rebellion was still frequent.⁷²

Nevertheless in some ways the trend towards demographic self-sufficiency may have worked against social cohesion. From day to day Creoles gave an overseer less trouble than Africans, but they were more alert to the white man's culture, which during the later eighteenth century came to include new libertarian principles from Europe and North America. Creoles shared a common language and tradition—the point had given cause for concern as early as the 1660s⁷³—while the Africans' capacity for effective resistance was limited by tribal differences. Shortly after reaching Jamaica, Thistlewood saw a little of these in the Kingston suburbs: '[28 April 1750] In the evening (Sunday) Mr Fowler and I walked to Spring Path, to the Westward of the Town, to see Negroe diversions, odd Musick, Motions &c. The Negroes of each Nation, by themselves.'

Ten years later he experienced at first hand a slave rebellion

⁷² Craton, *Testing the Chains*; Patterson, *Sociology of Slavery*, 273–80; Goveia, *Leeward Islands*, 198; Starkey, *Barbados*, 87–8.

⁷³ M. Craton, 'Proto-peasant Revolts? The Late Slave Rebellions in the British West Indies 1816–1832', *Past and Present*, No. 85 (1979), 100 n. 7.

in the parish of Westmoreland. This uprising, attributed to Coromantees, engulfed only a minority of the local estates. Thistlewood, although suspicious of his own slaves' disposition, armed some of them at critical moments, and kept up a semblance of working routine through the emergency.⁷⁴ A neighbour's wife did the same, as she told her proud husband on his return from militia duties: 'she hade Armed her Negroes and Imploded her Self by sitting down, and making Catherages, which answer gave me Infinite Pleasure . . .'.⁷⁵ The treasurer of the rebels was said to have been arrested by slaves from a 'loyal' estate when he visited Westmoreland's principal town to buy gunpowder.⁷⁶ Some disturbances later in the decade on another property nearby were even more obviously limited to recently purchased contingents, and could be easily suppressed. The overseer assured his employer:

The unlucky Circumstance of having some of the New Negroes Charged with Rebellion was a matter I believe of real Concern to most of the Sensible Negroes, as they thought it a sort of Stain upon their Character, which they had ever before Preserved free from Blemish. I must do them the Justice to say, it is my Opinion they are as free from any Rebellious Principles as any Negroes in the Country.⁷⁷

While the slaves lacked unity of purpose, revolt was unlikely to succeed, but from the mid-1760s planters began to notice an alarming innovation, 'a Dance called the Myal dance which was first used Among the Negroes in the time of the late Rebellion [in 1760]'.⁷⁸ The ritual purported to give protection against European sorcery, such as musket shot, and while of African type was not nationally exclusive. Creoles, many of them privileged individuals, took part: '[22 March 1769] Egypt Lucy acquainted Phibbah privately that the Myal-dance has been held

⁷⁴ J. R. Ward, 'A Planter and His Slaves in Eighteenth-century Jamaica', in T. C. Smout (ed.), *The Search for Wealth and Stability* (1979), 10-14; Craton, *Testing the Chains*, 133-6.

⁷⁵ Hall MSS, 1069, No. 2, J. Barclay to T. Hall, 1 Aug. 1760. Barclay emphasized that most white women fled the Westmoreland countryside to take refuge in ships anchored off the coast.

⁷⁶ Monson MSS, Thistlewood Diaries, 3 Oct. 1761.

⁷⁷ Clarendon MSS, Dep. c 357, D. Barnjum to J. F. Barham, 8 May 1767. For local carelessness about security in this period see Ward, 'A Planter and His Slaves', 17-19.

⁷⁸ Hall MSS, 1069, No. 1, S. Cleland to T. Hall, 24 Oct. 1765. For a general account see M. Schuler, 'Myalism and the African Religious Tradition in Jamaica', in M. E. Crahan and F. W. Knight (eds.), *Africa and the Caribbean: The Legacies of a Link* (Baltimore, 1979), 65-79.

Myo

twice, in Phibbah's Coobah's house, at Paradise Estate, by negroes from Long Pond Estate, as also Egypt Dago, and Job, who are both Myal-Men, attend those dancings.' Phibbah was Thistlewood's long-service housekeeper and mistress, her daughter Coobah (born before his arrival in Jamaica) was a domestic and favourite of the white men, Dago was the overseer's cook at Egypt, and Job a distiller. The year before a myal man and his mulatto wife had been executed in the parish.⁷⁹

Then in 1776, as troops left Jamaica for action against the North Americans, evidence came to light of an extensive conspiracy, with an unprecedented range of co-operative leadership, both African and creole: 'Drivers, Tradesmen, Old Waiting Men, who had formerly been off, with their Masters in England, and other *favourites* in whom the *Utmost* Confidence had always been reposed, whereas, in all former disturbances it was among the Guinea or Salt Water Negroes, that the Plots were Concerted ...'⁸⁰ The waiting-men were thought to have been encouraged by overheard table-talk of American claims for freedom. Fifteen years later similar alarms revived with the revolution on Saint-Domingue, also notable for the conspicuous part taken by the skilled and the island-born. An elderly absentee complained: 'I remember the great rebellions in Jamaica projected and supported by Guinea negroes alone. Creoles were *then* content with their situation.'⁸¹ Nevertheless, most actual outbreaks, as distinct from rumoured conspiracies, continued for some time to be the work of Africans, until after the closing of the transatlantic slave-trade, when three colonies—Barbados in 1816, Demerara in 1823, Jamaica in 1831–2—were convulsed by rebellion, erupting on a scale that had become quite unusual in the British West Indies over the previous century.⁸²

How should this final sequence be explained? Did it occur

⁷⁹ Monson MSS, Thistlewood Diaries, 2 July 1768.

⁸⁰ British Library, Add. MS 18275A, T. Thistlewood to E. Long, 17 June 1777. See also Sheridan, 'Jamaican Slave Insurrection Scare', 300–3; and, for similar fears of a Creole–African coalition on Antigua in the 1730s, D. B. Gaspar, *Bondmen and Rebels: A Study of Master-Slave Relations in Antigua* (Baltimore, 1985).

⁸¹ Dickenson MSS, DD/DN 263, C. Dickenson to W. Dickenson, 22 Jan. 1792; Geggus, *Slavery, War and Revolution*, 40, 89–92.

⁸² Craton, *Testing the Chains*, 241–321. For the Jamaican slaves' relative quiescence during the 1790s, and evidence of continuing tensions between Africans and Creoles, see D. Geggus, 'The Enigma of Jamaica in the 1790s: New Light on the Causes of Slave Rebellions', *William and Mary Quarterly*, 3rd Ser. xlv (1987), 274–99.

despite improvement in material conditions, as the planters themselves claimed, because of outside provocations: in 1816 the scheme to establish registers of slave population, in 1823 the British government's proposals for regulating slave treatment, and in 1831 the upsurge of militant abolitionism? On each occasion an external initiative allegedly persuaded rebel leaders that freedom was imminent, or theirs for the taking. Alternatively the insurrections can be seen as drawing much of their strength from developments inside slave society, with amelioration on the whole a destabilizing influence.

[To the extent that standards of treatment had been raised, this movement may have been halted, perhaps even reversed, with the decline in the sugar market, frustrating expectations aroused by earlier progress.⁸³] A further cause for discontent possibly arose from the effect on employment patterns of changes in population structure. While the estate labour force was still recruited from Africa, so the argument runs, most creole men received some privileged assignment—as craftsmen, drivers, or specialists in the sugar works. New negroes and creole women made up the strength of the field gangs. However, these principles of occupational division could not be maintained after 1808, especially where a substantial decline in slave numbers ensued, as on Jamaica. A greater proportion of creole men, including even some of mixed race, now had to be committed to field labour, and it has been postulated that their disappointed hopes for promotion helped to stimulate the 1831–2 rebellion.⁸⁴

Creolization is likely to have given the slaves a greater coherence and sophistication of purpose, offering a more serious challenge to the slave-holding regime, not least through their capacity to evoke a sympathetic metropolitan response. Old-style 'African' rebellions commonly entailed a limited following, indiscriminate destruction, and the massacre of white settlers. Nineteenth-century rebellions were less spontaneous. Most

⁸³ This is suggested as a cause of Jamaica's 1831 rebellion by Turner, *Slaves and Missionaries*, 200.

⁸⁴ Higman, *Jamaica*, chs. 9, 11. Slaves might be disappointed either for themselves or their children. Barbados planters claimed that instruction in skilled trades 'is usually done to gratify the well conducted Parents and reward them for their good conduct . . .'. B. M. Taylor, 'Our Man in London: John Pollard Mayers, Agent for Barbados, and the British Abolition Act, 1832–1834', *Caribbean Studies*, xvi, Nos. 3 and 4 (Oct. 1976, Jan. 1977), 71.

notably, [the Jamaican uprising of 1831-2 derived from an extensive conspiracy, embracing scores of properties over at least a hundred square miles in the island's western districts, and co-ordinated at least partly through congregations of the Baptist church. (The Baptists were one component of a large missionary enterprise to the West Indies, established mainly within the last forty years as a product of British evangelicalism. Planters patronized or tolerated the movement from a sense of expediency and, in a few cases, from spiritual conviction.⁸⁵) The slaves, believing that emancipation had been decreed, but concealed by their masters, were to 'sit down' after the Christmas holidays, demanding the payment of wages. White people should not be harmed, nor property damaged, except in retaliation against physical assault, for freedmen would require employment on the sugar estates. In the event rebellion began with the firing of the trash house at Kensington, an upland estate ten miles to the south-east of Montego Bay. From this vantage-point arson, plunder, and violence spread over most of St James, eastern Hanover, and the adjacent fringes of neighbouring parishes. Those whites who could make their escape retired to the towns; others were taken prisoner. Yet although the rebels effectively held the countryside in western Jamaica for a week, before the colonial militia and regular troops could get to work, throughout the uprising no more than a dozen white men lost their lives: 'In some instances they were awakened from sleep and dismissed half-dressed before their building was set on fire.'⁸⁶

* By way of contrast, at least 200 slaves were shot out of hand and a further 340 executed after summary trials.⁸⁷ Also the colonists maltreated several missionaries, in the belief that they had instigated the rebellion. Chapels were destroyed by officially sanctioned mobs. Sufficient evidence could not be found to convict any of the missionaries in a court of law: they seem to have scrupulously preached subordination and patience. However, the Baptist clergy had been least cautious, many of their converts were prominent among the rebels, and clearly this

⁸⁵ Turner, *Slaves and Missionaries*. For accounts of the Jamaican rebellion see also Craton, *Testing the Chains*, 291-321; M. Reckord, 'The Jamaica Slave Rebellion of 1831', *Past and Present*, No. 40 (1968), 108-25.

⁸⁶ H. M. Waddell, *Twenty-nine Years in the West Indies and Central Africa 1826-1858* (1863), 66.

⁸⁷ Craton, *Testing the Chains*, 313.

church's loosely supervised system of association under lay 'leaders' gave unusual scope for adherents to put their own construction on the gospel message. Furthermore, an autonomous 'native Baptist' tradition—distinct from the European missions, and interrelated with myalism—had developed among the slaves from the work of black or coloured North American preachers.⁸⁸

The Jamaican rebellion and its disgraceful sequel, in particular the attacks on the missionaries, finally convinced opinion at home that slavery must not be allowed to continue. The policy of education, inducement, and gradual reform pursued since 1823 by the Colonial Office had obviously failed. Even some absentees were persuaded that only radical action might save at least part of their property. During the summer of 1833 parliament voted, by large majorities in both Commons and Lords, that from 1 August of the following year all slaves would be freed throughout British territory.⁸⁹

How important were local, economic stresses as a cause of early nineteenth-century unrest? It is unlikely that they contributed much to the rebellion on Barbados in 1816, a time of excellent crops and high profits,⁹⁰ but from 1820 planters' revenues fell sharply throughout the older British West Indies. So did this recession bring a worsening in estate conditions, with the Demerara and Jamaica risings as only the most conspicuous symptoms of more widespread material grievances?

In general planters did not intensify work schedules as a means of compensating for lower sugar prices. On St Kitts productivity was allowed to decline, on Antigua it was held constant, while its increase on Barbados resulted from continuing efficiency improvements. On Jamaica, despite the elimination of many marginal undertakings, exports per slave employed in sugar production were slightly lower by the time of emancipation than during the Napoleonic period, because of decreases in cane acreage and a renewed emphasis on ratoons.⁹¹ In the early 1820s, however, as a most unfortunate coincidence with the downturn of the sugar market, Jamaican gangs were severely weakened by the ageing of the colony's last African

⁸⁸ Turner, *Slaves and Missionaries*, 94–5; Schuler, 'Myalism', 68.

⁸⁹ Turner, *Slaves and Missionaries*, 170–3; Higman, *Jamaica*, 231.

⁹⁰ K. Watson, *The Civilised Island: Barbados, a Social History, 1750–1816* (Barbados, 1979), 241; Klingberg, *Codrington Chronicle*, 82.

⁹¹ See above, 91–5; Higman, *Jamaica*, 213–23.

slaves, imported before the closure of the transatlantic trade. At the same time the estates reduced their purchasing of slaves from smaller properties, a widely used method of reinforcement since 1808. Between the registrations of 1817 and 1823 the longer-term benefits to labour-force quality from creolization were offset by a 15 per cent decline in the number of prime-age workers available for the canefields.⁹²

For the newer colonies the trend in labour requirements is more problematic. On the Ceded Islands (not affected by rebellion) output per slave employed on the sugar estates rose slightly after 1820. The data for Trinidad and British Guiana do not allow any precision on this subject, although in the latter there was a marked shift in emphasis towards sugar from cotton and coffee, which could be expected to entail harder work for the slaves who were reassigned.⁹³ However, one available indicator of the pressure on the work-force does not suggest any deterioration. The slave registrations of Demerara/Essequibo, while presented in a form that makes it very difficult to calculate vital rates, give unusually full information about ages and employment. The returns show no change between 1817 and 1832 in the average ages, relatively late by the standards current elsewhere, at which children were first put to work, and subsequently shifted from light tasks to the adult field gangs.⁹⁴

As for consumption standards, the best single measure of proprietors' willingness to spend money on their slaves is given by per caput fish imports. They at least held up in Barbados, the Leewards, and the new colonies;⁹⁵ in Jamaica they increased (Table 30). The price of herring and dried cod fell even more rapidly than that of sugar, while overseers reported that attempts to make savings in rations were likely to be quite

⁹² Population returns for 12 Jamaican sugar estates 1817-29: *Parl. Papers* 1831-2, xx (721), 576-7; population returns for 76 sugar estates in Trelawny parish 1817-29: Report from the Select Committee . . . to inquire into the Commercial State of the West India Colonies, *Parl. Papers* (House of Lords) 1831-2, cccvi (127), 249-61.

⁹³ Stressed as a possible cause of discontent by Craton, *Testing the Chains*, 267-9.

⁹⁴ A sample of 10 estates, 5 producing sugar and 5 devoted to other crops, has been taken from each of the Demerara/Essequibo registration returns for 1817-32: PRO, T. 71/391-430. During the period 1817-23 the average age at which healthy children were put to work was 7.9 years on sugar estates and 9.2 years on non-sugar estates. The average age at which slaves moved into the field gang was 14.6 years on sugar estates and 14.2 years on non-sugar estates. During the period 1826-32 the corresponding figures are 7.8, 8.1, 15.3, and 15.2 years.

⁹⁵ See above, Table 7.

TABLE 30. *Jamaican Fish Imports, 1815-1834*

	Jamaican fish imports (‘000 lbs.)	Imports per slave (lbs.)		Jamaican fish imports (‘000 lbs.)	Imports per slave (lbs.)
1815	16,925	50	1825	n.d.	n.d.
1816	19,091	56	1826	25,192	76
1817	n.d.	n.d.	1827	26,438	81
1818	22,550	66	1828	25,286	78
1819	n.d.	n.d.	1829	25,949	80
1820	25,329	74	1830	n.d.	n.d.
1821	n.d.	n.d.	1831	n.d.	n.d.
1822	n.d.	n.d.	1832	26,089	84
1823	23,338	69	1833	24,891	80
1824	n.d.	n.d.	1834	23,641	76

Sources: Edwards, *West Indies*, v, Appendix, 47, 52-3; PRO, CO 141, *Royal Gazette*, Nov. 1818, 1820, 1823, 1826, 1829; Statements . . . relating to the British West India Colonies, *Parl. Papers* 1830-1, ix (120), 60; Revenue, Population and Commerce of the United Kingdom, *Parl. Papers* 1835, xlvii (693), etc.; Higman, *Jamaica*, 255-6.

counter-productive. On Grenada, ‘if negroes do not receive what they know is their right by an act of the Island [2 lbs. of salt provisions each per week] little good can be got from them’.⁹⁶ Later the curtailment of fish distributions effected during apprenticeship would be described by ex-slaves as a painful novelty.⁹⁷

Purchases of breadstuffs were cut back in the 1820s, although at the same time efforts to improve local food crops continued. This was the period of most radical reform in cultivation patterns on Antigua’s Parham estates.⁹⁸ In Jamaica some slaves received extra time to work their provision grounds. However, the concession was not made uniformly, and resentment arising from differences in practice between estates became especially

⁹⁶ Home of Wedderburn MSS, GD 267 5/24, J. Fairbairn to G. Home, 5 Nov. 1812. Shortly before emancipation the owner of the Pine estate on Barbados ‘got himself into extreme difficulties, during the later years of which this fine estate went to complete ruin, and, so reduced was he that he was unable to give his slaves their proper allowance or anything. He therefore lost all authority over them and for a long time suffered them to do only what they liked . . .’: *Colthurst Journal*, 106-7. The long-term rise in sugar production on Barbados suggests that this instance was exceptional.

⁹⁷ Sturge and Harvey, *West Indies in 1837*, Appendix, p. xxxviii.

⁹⁸ See above, 67-72.

acute in the western districts where the 1831-2 rebellion would be centred. The issue of Saturday working provoked Hanover parish's 'Argyle War' in 1824. Five years later the slaves of Flint River estate, eight miles to the north of Argyle, were publicly flogged for claiming an occasional Saturday for themselves during crop. (On his 1816 visit Mathew Lewis had allowed this privilege at his estate in Westmoreland.) On the coast of St James in December 1831 each Saturday was free for the provision grounds at Rose Hall, but not at Dunn's Hole.⁹⁹ Perhaps disputes over this matter drew on older traditions. A popular demand associated with resistance required that several days, usually three days in each week, be left for the slaves' own use. It was reported from Saint-Domingue after 1789, Dominica in 1791, St Kitts in 1793, Tobago in 1807, Grenada in 1816, Demerara in 1823, as well as Jamaica in 1831.¹⁰⁰ Extra days, the slaves often asserted, had been allowed by the king or the master, but withheld by his agents. In the earlier episodes the aspiration was apparently towards a regulated servitude rather than complete emancipation. The common form of this claim over several widely separated territories, where the creole element was sometimes still quite small, suggests a recollection of African slavery, which frequently included the principle that the master's claim on a dependant's time should be limited.¹⁰¹

The registration returns show a continuation of the long-term movement towards natural increase on Barbados and the Leewards (Table 31). On Jamaica the depletion rate rose slightly between 1817 and 1832, but matters here are more seriously complicated by the ageing of the island's many Africans.¹⁰²

⁹⁹ See above, 112-14; *Parl. Papers* (House of Lords) 1831-2, cccvi (127), 646; Higman, *Jamaica*, 131-2; Craton, *Testing the Chains*, 302. Although in 1823-4 slave disturbances or conspiracies were investigated elsewhere in Jamaica, official reports mention the issue of Saturday working only in the west: Papers relating to . . . Slaves in the West Indies, 1822-24, pt. VII, *Parl. Papers* 1825, xxv (66), 45, 116-18.

¹⁰⁰ G. Debien, 'La Nourriture des esclaves sur les plantations des Antilles françaises aux XVII^e et XVIII^e siècles', *Caribbean Studies*, iv, No. 2 (July 1964), 19; Craton, *Testing the Chains*, 252-3, 284; Romney MSS, U 1515, E 290-3, 300, J. Goldfrap to Lord Romney, 11 Aug. 1793; Home of Wedderburn MSS, GD 267 5/7. J. Fairbairn to G. Home, 2 May 1816; Craton, 'Proto-peasant Revolts?', 121-2.

¹⁰¹ S. Miers and I. Kopytoff, *Slavery in Africa: Historical and Anthropological Perspectives* (Madison, 1977), 128-9, 137, 143, 341, 345-6. On Jamaica in 1831 slaves had clearly reached the conception of complete freedom, but the 'three days' tradition seems to be reflected in the demand for 'half pay': Craton, 'Proto-peasant Revolts?', 121.

¹⁰² At the start of registration (1813-19) Africans comprised 37% of the slave

TABLE 31. *Natural Increase of Slave Populations, 1817-1834*
(Rates per 1,000)

Barbados		St Kitts		Nevis
1817-20	+4.8	1817-22	-5.7	-4.6
1820-3	+6.5	1822-5	-0.4	-1.0
1823-6	+12.1	1825-8	+1.8	+0.3
1826-9	+10.0	1828-31	+2.0	-1.3
1829-32	+5.7	1831-4	+4.6	+5.9
1832-4	+14.4			
Antigua Montserrat		Jamaica		Ceded Islands
1817-21	-4.3	+0.5	1817-20 -0.7	1817/19-25/6 -10.1
1821-4	-0.5	-0.6	1820-3 -3.1	
1824-8	+0.2	+4.5	1823-6 -2.1	1825/6-31/3 -4.2
1828-31/2	-2.0	+9.5	1826-9 -3.4	
			1829-32 -4.8	
Demerara/Essequibo		Berbice		Trinidad
1817-20	-9.8	1819-22	-7.9	1813-16 -6.6
1820-3	-11.7	1822-5	-13.5	1816-25 -11.0
1823-6	-14.3	1825-8	+0.8	1825-34 -6.6
1826-9	-5.0	1828-31	-4.8	
1829-32	-14.5			

Source: Higman, *Slave Populations*, 308-10, 414-15, 606-7.

Adjusting for changes in population structure, slaves employed in Jamaican sugar planting suffered an increase of about 15 per cent in standardized mortality between the triennia 1817-20 and 1820-3, as a result of the pressures generated by the crisis in estate finances and the sudden loss of effective workers. Subsequently improvement was resumed for the Creoles, except in a group of parishes at the centre of the island.¹⁰³ The late summer

population on Jamaica, 36% on the Ceded Islands, and 54% in Trinidad and Berbice, but only 7% on Barbados and 16% on the Leeward Islands: Higman, *Slave Populations*, 462-8.

¹⁰³ For fuller details of mortality trends see below, endnote 5. Five central parishes

mortality peak, a sensitive measure of feeding standards, remained modest, at least in the western districts (Table 32). The period immediately preceding the 1831 rebellion was not marked here by an unusually large number of deaths.¹⁰⁴ On the Ceded Islands and St Lucia the depletion rate fell markedly in the 1820s, even though the composition of their slave populations was very similar to that of Jamaica. In the other new colonies the trend was no more unfavourable than on Jamaica, despite a much greater proportion of Africans.

Turning aside from the subject of material conditions, is it likely that creolization caused unrest? Estate listings do perhaps show that as time passed the Creoles' chances of securing a privileged occupation were restricted, but not to any great extent (Table 33). A good deal of skilled work had been given to Africans, so the decline in their numbers made posts available for the rising generation, which stood to gain also from the displacement of white specialists and the course of technical change. (Increasingly elaborate equipment required extra carpenters, blacksmiths, and masons; heavier sugar crops required extra coopers.¹⁰⁵) Furthermore it is doubtful whether, as a general rule, planters had much to fear from field gangs with large proportions of Creoles. During the period of amelioration estates on Barbados and the Leewards came to make the most use of creole men for field labour, without showing particularly severe symptoms of unrest. They experienced no major rebellion, apart from Barbados in 1816, an episode for which it has not proved possible to identify limited promotion opportunities as a major

(Clarendon, St John, St Thomas-in-the-Vale, St Dorothy, and St Catherine), with 15% of the Jamaican slave population, account for 58% of the increase in its depletion rate between 1826-9 and 1829-32. The rest of the increase was due to the killings associated with the 1831-2 rebellion in the western parishes: Higman, *Jamaica*, 256-8.

¹⁰⁴ Only a few registration returns, most of them from western estates, give the month of death. Reports of 'unusual sickness and distress' immediately before the uprising seem to have been inspired by a smallpox epidemic in Spanish Town and Kingston: Reckord, 'Jamaica Slave Rebellion', 111; Craton, *Testing the Chains*, 296. It was kept off the sugar estates by systematic vaccination: Goulburn MSS, III/3T, A. Bayley to H. Goulburn, 6 Aug., 19 Nov. 1831. There was however an outbreak of dysentery in Westmoreland during the summer of 1831: Clarendon MSS, Dep. c 389, W. Ridgard to J. F. Barham, 29 Aug., 30 Sept. 1831.

¹⁰⁵ For the growing ratio of craftsmen to field labourers see Table 24. Table 33 only distinguishes Creoles, both black and coloured, from Africans. Outside Barbados the use of coloured slaves as field labourers remained very rare.

TABLE 32. *Seasonal Patterns of Mortality on Jamaican Sugar Estates,
1817-1820 and 1829-1832*
(Quarter's Death Rate as % of Annual Average)

Parish	Hanover		St James		Trelawny		Westmoreland	
	1817-20	1829-32	1817-20	1829-32	1817-20	1829-32	1817-20	1829-32
Jan.-Mar.	114	91	89	86	104	92	92	90
Apr.-June	68	122	98	101	92	87	98	92
July-Sept.	115	106	107	110	93	96	104	124
Oct.-Dec.	103	81	106	104	111	125	106	94
Number of Deaths	260	79	690	270	510	230	545	462

Sources: Registration Returns, PRO, T. 71.

TABLE 33. *Origins and Occupations of Male Estate Slaves Aged 18+, 1737-1833 (%)*

	Creoles		Africans	
	Skilled ^a	Unskilled	Skilled	Unskilled
<i>Barbados and Leeward Islands</i>				
Parham, Antigua 1737	16	45	5	34
Turners Hall, Barbados 1780	27	32	5	36
Newton and Seawells, Barbados 1796	40	52	3	5
Turners Hall, Barbados 1817	24	76	0	0
Romney, St Kitts 1817	33	57	4	6
Martin Byams, Antigua 1830	45	55	0	0
<i>Jamaica</i>				
Dukenfield Hall 1764	12	12	22	54
York 1782	17	10	18	55
Good Hope 1804	18	21	24	37
Irwin 1821	28	70	1	1
Mount Hindmost 1827	36	56	0	8
Rose Hall 1832	46	37	5	12
Perrins 1833	42	50	3	5
<i>New colonies</i>				
Vreedenhoop, Demerara 1825	12	17	16	55
Wales, Demerara 1826	4	30	11	55

^a 'Skilled' slaves include craftsmen, drivers, sugar boilers, and distillers. All other occupations are considered 'unskilled'.

Sources: Slave listings detailed in Appendix.

point of contention.¹⁰⁶ Even conspiracy scares became very infrequent on these islands.¹⁰⁷

Most colonists here continued to believe that creolization improved security, and gave reassurance against alarming examples elsewhere. The French landing on St Kitts during the

¹⁰⁶ Craton, *Testing the Chains*, 254-66; H. McD. Beckles, 'Emancipation by Law or War? Wilberforce and the 1816 Barbados Slave Rebellion', in Richardson (ed.), *Abolition and its Aftermath*, 80-104. The Barbados rebellion was not preceded by any significant increase in running away, of the kind that might have been expected if the uprising resulted from a long-term process of social change: G. Heuman (ed.), *Out of the House of Bondage: Runaways, Resistance and Marronage in Africa and the New World* (1986), 105. Geggus, 'The Enigma of Jamaica', 294-5, suggests that the 1816 rebellion may have been encouraged by the recent reduction of the Barbados garrison.

¹⁰⁷ Gaspar, *Bondmen and Rebels*, 211-13; R. Frucht, 'From Slavery to Unfreedom in the Plantation Society of St. Kitts, W. I.', in Rubin and Tuden (eds.), *Comparative Perspectives on Slavery*, 383; S. Drescher, *Capitalism and Antislavery: British Mobilization in Comparative Perspective* (1986), 101.

American War of Independence met such vigorous resistance from the slaves that their masters, besieged in the fort on Brimstone Hill, had to make some nervous calls for restraint. The invaders threatened otherwise to respond with harsh reprisals.¹⁰⁸ In 1784 the slaves of Antigua were described as 'the best disposed'.¹⁰⁹ A resident on Nevis hoped in 1799 that the failure of the British expeditionary force to suppress the Haitian rebels would not have unpleasant local consequences: 'The communication hither from St. Domingo is not very frequent, and the negroes appear either entirely ignorant of the circumstance, or are perfectly quiet under the knowledge of it.'¹¹⁰ The 1823 rebellion in Demerara, where Africans still made up half the population and 70 per cent of the adult males, was reported to give no cause for anxiety on Antigua, by this time almost entirely creole, although recent discussions in England and a pamphlet by Wilberforce had created strong interest among the island's slaves.¹¹¹

For Jamaica, on the other hand, there are signs that the management of Creoles was becoming more difficult, especially when they received menial tasks. Among the field men at Good Hope in 1804 nine of the thirty-eight Creoles, but only one of the sixty-six Africans, were considered to be 'lazy', 'indolent', or habitual runaways.¹¹² In 1833 at Grange Hill pen, recently converted from sugar, seven of the twenty-six creole field men, but neither of their African fellows, attracted unfavourable remarks in the listing. At Perrins estate in the same year half of the twenty young men were reported as wanting a trade, although only four of these would have their wish fulfilled in the near future.¹¹³ During the last few years of slavery there was an increase in the number of the advertisements for creole work-house prisoners that mention scars left by flogging (Table 34), and the 1831-2 rebellion was very much a creole project.

Of course the Creoles' disaffection need not have resulted

¹⁰⁸ PRO, CO 152/62, fo. 52, Governor Shirley's dispatch, 12 Jan. 1782. For similar problems on Nevis see Pares, *West-India Fortune*, 98-9.

¹⁰⁹ Fitzherbert MSS, WI/3, W. Munro to Messrs Jaques and Fisher, 15 Mar. 1784.

¹¹⁰ Bodrhyddan MSS, W. W. Harman, 23 Nov. 1799.

¹¹¹ PRO, CO 7/9, Governor's dispatch, 14 Sept. 1823. Drescher, *Capitalism and Anti-slavery*, 107, notices that the Demerara uprising casts doubt on the thesis that creolization provoked rebellion.

¹¹² Tharp MSS, R.55.7.123.2.

¹¹³ Fitzherbert MSS, WI/20, slave listings.

TABLE 34. *Proportions of Advertised Jamaican Runaway Slaves Described as Scarred by Flogging, 1813-1834 (%)*

	Males		Females	
	Creoles	Africans	Creoles	Africans
1813-14	1.2	4.0	—	0.6
1815-19	1.2	1.5	1.2	—
1820-4	1.7	2.3	0.7	—
1825-9	4.6	4.0	—	2.9
1830-4	7.9	5.1	3.4	1.9

Source: As for Table 25.

primarily from an objective change in the character of estate life. Perhaps their greater susceptibility to the new political currents was decisive, as the missionary H. M. Waddell believed:

The Creoles—young, strong and giddy with the new-born hope of liberty, which they said the King had given them and their masters withheld—resolved to stand out for the wages of free labour, and, if needful, to fight for their rights. The old people discouraged the attempt. They had seen worse times, and were sensible of a growing amelioration of their condition. The experience also of former insurrections taught them to dread the consequences of failure.¹¹⁴

Yet the rebellion originated towards the interior of St James and Hanover, while failing to take hold on the seaside estates, although they had the most Creoles and coloured slaves, with the fullest knowledge of the anti-slavery movement.¹¹⁵ The inland districts had undergone a considerable extension of sugar planting during the war period. Since then many of their estates were proving uneconomic, with unpleasant results for the labour

¹¹⁴ Waddell, *Twenty-nine Years*, 51. Waddell was active on estates in northern St James.

¹¹⁵ Compensation claims (Report from the House of Assembly, Jamaica, on the Injury sustained during the Recent Rebellion, *Parl. Papers* 1831-2, xlvii (561), 39-41) and details from the registration returns of slaves killed or executed (PRO, T. 71/222-3) have been used to identify 50 sugar estates in St James parish which suffered material damage in the rebellion. Twenty-five other St James estates, nearly all within a few miles of the sea, reported no losses. In 1817 33.6% of the slaves belonging to estates in the first category were African and 7.4% coloured. On estates in the second category 25.1% of the slaves were African and 9.6% coloured: PRO, T. 71/201-4. For a map showing the incidence of destruction see Craton, *Testing the Chains*, 292.

force, as shown by the intensity of disputes over Saturday working. On the longer-settled coastal lowlands slave purchases had been phased out gradually; on the rebellious properties large numbers of recently imported Africans (another legacy of the wartime expansion) entailed very rapid creolization. As a result, the stresses caused by changes in occupational structure and the loss of vigorous young workers may have outweighed the assistance to management that came with an acculturated slave holding.

Economic difficulty alone did not provide a sufficient catalyst for revolt. By 1831 Jamaica's central parishes were in a worse plight than the west, with rising mortality and a greater proportion of failing estates.¹¹⁶ They remained quiet, however, their planters protected to some extent by relative isolation. According to William Taylor, although the slaves of Vere, in regular contact with Kingston through their marketing activities, expected to be given every Saturday out of crop, those of upper Clarendon had never heard of the privilege.¹¹⁷ In western Jamaica there was a close juxtaposition of properties with different cultivation needs and economic potential. On dry-weather coastal estates long ratooning had eased field work, while the slaves' own grounds were quite unproductive. A few miles inland each cane piece still had to be laboriously replanted after only three or four years, in conditions that would be ideal for other crops. (After emancipation most ex-slaves in coastal St James readily hired themselves out to the plantations. Elsewhere in the parish few wage workers came forward, and there was a marked increase of activity on the provision grounds, including the growing of ginger for export through the port of Montego Bay.¹¹⁸) The dangerous opportunities for comparison arising from local geography were reinforced by the network of Baptist congregations, most strongly developed in the western parishes. Finally, the presence nearby of the Maroons sustained a potent tradition of revolt, despite their well-deserved reputation as slave-hunters.¹¹⁹ All these elements joined together for combustion in St James and Hanover.

¹¹⁶ Hall, *Free Jamaica*, 82.

¹¹⁷ *Parl. Papers* 1831-2, xx (721), QQ. 152, 168.

¹¹⁸ Craton, *Testing the Chains*, 294; *Parl. Papers* 1836, xlviii (166), 272-4.

¹¹⁹ Some of the Argyle rebels in 1824 expected aid from the Maroons: *Parl. Papers* 1825, xxv (66), 116. Kensington estate, the starting-point for the 1831-2 uprising, lay 3 miles to the north-west of Old Maroon Town.

* As a rule amelioration worked to strengthen the white man's authority, even on Jamaica, at least in its more successful planting districts. Over most of the island progress had been resumed by the later 1820s, after the reverses earlier in the decade. Christmas militia duties were given up, or became a matter of form.¹²⁰ In Trelawny the rate at which slaves were lost through running away and criminal convictions declined.¹²¹ Estate correspondence from Vere and Westmoreland gives an impression of calm: 'I am happy to inform you that the Holidays have passed over throughout the Island I believe as quietly as they have done in this part of it . . .'; 'the Negroes are not showing at present any refractory disposition . . .'; 'the Country is generally in a very tranquil state, so much so that no guards are ordered for Christmas . . .'.¹²² From the evidence of demographic patterns and import trade, the decline of sugar prices in the early 1830s was made to fall more upon planters' income than the slaves' welfare. To this extent the colonists were justified in claiming that the rebellion was caused by outside agitation rather than their own economic failure. It would however be misleading to deal only with averages or aggregates, covering crucial differences between ecological zones, or viable and bankrupt estates. Most Jamaican planters had improved their regime, but they had failed as a class to establish that sense of uniformity and routine so essential for equilibrium in slave societies.

¹²⁰ Waddell, *Twenty-nine Years*, 51. The risk of disorder usually seemed greatest at the holiday period.

¹²¹ *Parl. Papers* (House of Lords) 1831-2, cccvi, 249-61.

¹²² Goulburn MSS, III/3T, A. Bayley to H. Goulburn, 1 Jan., 13 Oct. 1826, 30 Jan. 1830; Clarendon MSS, Dep. c 360, Bundle 8, D. Robertson to J. F. Barham, 14 Feb. 1827.

The Aftermath of Slavery

UNDER the terms of the Emancipation Act¹ slavery came to an end throughout the British colonies on 1 August 1834, but only children less than 6 years old were liberated immediately. The other ex-slaves began 'apprenticeship', a further period of regulated labour meant as an education for full freedom. Parliament intended that 'praedials'—workers committed to agriculture—would serve six years; 'non-praedials'—mainly domestic servants, who were supposed to be more civilized—faced a term of only four years. While they continued as apprentices the ex-slaves would remain subordinate to their former owners, but giving no more than forty-five hours' obligatory labour a week, and less than this from individuals who maintained themselves by provision grounds. (Local regulations subsequently prescribed 40½ hours' work a week for apprentices with grounds; no apprentice could be required to work at night or on Sundays.) Any additional labour should be given voluntarily, on the basis of free negotiation with the prospective employer. The customary allowances of slavery—food, clothing, and medical care—were to continue. Supervision on all these points, and the right to order punishments, was assigned to a new corps of stipendiary magistrates, their salaries paid by the metropolitan government, and so presumably impartial in judgement. As compensation for the loss of their property, slaveowners shared a £20 million grant.

Immediately before emancipation the planters were suffering an acute commercial crisis,² yet during apprenticeship, after political defeat, their economic situation seemed to take a turn for the better. Recovery was based in part on the growth of business activity and purchasing power within Great Britain

¹ 3 & 4 William IV, c. 73; for the details of the act and its implementation see Burn, *Emancipation and Apprenticeship*; Green, *British Slave Emancipation*, 129–61.

² See above, 56–9.

during the mid-1830s. The other helpful influence, rather paradoxically, came with the operation of the apprenticeship system itself. For several colonies, Jamaica in particular, the hours of compulsory attendance, together with any extra labour that the apprentices could be induced to perform, represented a marked reduction in the work rate prevailing under slavery, and output declined as a result. Between 1834 and 1838 the quantity of sugar exported from the British West Indies to the United Kingdom, still in effect their captive market, fell by 10 per cent, while the London sugar price rose 40 per cent.³ Through the good offices of parliament, planters profited from inelastic consumer demand and the systematic limitation of supply, the antidote to depressed revenues proposed by some West Indians during the 1820s.⁴

For those islands which could adjust to the new regime without loss of efficiency the rewards were spectacular. On Barbados, where before emancipation labour demands had become relatively light, by 1838 'the rise in property . . . has been immense': one estate, sold in 1835 for £27,000, had recently changed hands for £42,000.⁵ Even on Jamaica profitability and expenditure on plantation equipment increased, the extra investment encouraged by the slave compensation grant and a government loan to repair estates damaged during the rebellion of 1831-2.⁶ Many British West Indian coffee estates were failing, victims of soil erosion and Asian competition, but most sugar planters persevered for the time being, unless physical conditions were exceptionally unfavourable, as on Nevis and Montserrat.

However, this modest prosperity proved to be short-lived. In 1838, after reports of serious abuses being suffered by the apprentices, metropolitan pressure brought the service of both praedials and non-praedials to an abrupt end. Planters, two years

³ Deerr, *History of Sugar*, i. 193-203, ii. 531. Comparison is made between the periods 1830-3 and 1834-8.

⁴ Clarendon MSS, Dep. c 381, Bundle 2, J. F. Barham's memoranda on West Indian affairs, c1825.

⁵ Fitzherbert MSS, WI/17, R. A. Alleyne to Sir H. Fitzherbert, 27 Dec. 1838. The purchase prices are in local currency. See also Sturge and Harvey, *West Indies in 1837*, 131.

⁶ Craton, *Invisible Man*, 175-6; Fifth Report from the Select Committee on Sugar and Coffee Planting, *Parl. Papers* 1847-8, xxiii, pt. II (206), 231; R. V. Sires, 'The Jamaica Slave Insurrection Loan, 1832-63', *Journal of Negro History*, xxvii (1942), 295-319. For imports of investment goods 1835-44 see Returns of Colonial Duties, *Parl. Papers* 1846, xxvii (679), 315-24.

sooner than they had expected, found themselves confronting a labour force which, formally at least, was now completely free, and they moved almost instinctively to devise new methods of coercion. On Barbados and the Leewards it was believed that the ex-slaves could be kept to their duty by the density of settlement and the estates' virtual monopoly of agricultural land, reinforced by strict laws against 'vagrancy' and the breach of employment contracts. The Antiguan legislature had been sufficiently confident to dispense altogether with the transitional phase of apprenticeship. Even so, with full freedom planters suffered a clear loss of authority. The Colonial Office disallowed the more stringent labour codes. Many labourers succeeded in buying their own house plots and gardens on marginal land away from the estates, for example in the 'Independent Villages' of Antigua. The new freeholders still needed an income from wage work but, with a property as support, could hope to secure better terms.⁷

The threat of emigration also loomed large. As soon as apprenticeship came to an end, planters in Trinidad and British Guiana sought new sources of labour. These sparsely settled colonies, with some of the richest soils in the Caribbean, could pay 2s. or 2s. 6d. a day for ordinary field work, double the usual rates elsewhere, and might seem to offer great reserves of land, free for peasant cultivation, although this was not a point to be advertised. Employers in the more populous islands to the north acted as best they could against these allurements. The freemen were warned of dank, snake-infested jungles, of unscrupulous ships' captains and the risks of re-enslavement. (Slavery had yet to be abolished in the French and Dutch possessions.⁸) New laws excluded recruiting agents and required emigrants to give surety for the maintenance of any dependants.

Nevertheless, although the Colonial Office tried to stop the importing colonies from using public revenues to subsidize recruitment within the West Indies, it would not tolerate unduly restrictive measures against emigration. By the early 1840s Barbados and the Leewards had lost hundreds of their best labourers.⁹ Then the outflow to British Guiana was checked by

⁷ Hall, *Five of the Leewards*, 24-47; Levy, *Emancipation, Sugar and Federalism*, 72-3.

⁸ Colthurst *Journal*, 220-1; Sturge and Harvey, *West Indies in 1837*, 16.

⁹ Green, *British Slave Emancipation*, 263-4; Starkey, *Barbados*, 117; Levy, *Emancipation*,

reports of wage reductions and harsh treatment, but Trinidad and some of the Windward Islands remained attractive.¹⁰ Through its role as a distribution point for imported goods, Barbados had regular communications to the other colonies (returning was more difficult), and in 1845 a stipendiary magistrate still reported: 'vast numbers evade the law and go from the island without applying for certificates'.¹¹ On St Vincent it was decided not to persevere with measures against emigration: they were unenforceable, and would only give labourers the impression that moving might be advantageous.¹² On Antigua fear of emigration influenced planters to accept the development of free villages. On St Kitts it obliged them to cease demanding obligatory service from tenants who rented estate land.¹³ On Barbados it fostered special measures to share out the rewards of sugar planting a little more widely, through the 'located labourer' system. Under this arrangement estate workers occupied houses and allotments at concessionary rates, with permission to grow cane. The proprietor assisted by supplying artificial manure, and by making available his carts and mill at crop time. In return, the tenants were expected to appear for plantation works when required.¹⁴

Whatever their difficulties, employers on these small islands dealt with long-settled, overwhelmingly creole populations, which had been accustomed to depend through much of the year on distributed rations. The slaves' experience did not prefigure peasant self-sufficiency, and individuals who sought a new life through emigration had to overcome local patriotism,¹⁵ inertia, and fear of the unknown. But in Jamaica, where mountain land lay within sight of the canefields, the

Sugar and Federalism, 78-83; Hall, *Five of the Leewards*, 41-8; A. H. Adamson, *Sugar without Slaves: The Political Economy of British Guiana, 1838-1904* (New Haven, 1972), 43-4; B. C. Richardson, 'Freedom and Migration in the Leeward Caribbean, 1838-48', *Journal of Historical Geography*, vi (1980), 391-408.

¹⁰ D. Wood, *Trinidad in Transition* (1968), 65-6; Davy, *West Indies*, 246, 256, 413.

¹¹ Papers . . . relating to the Labouring Population of the British Colonies, *Parl. Papers* 1846, xxviii (691), 148; *Parl. Papers* 1847-8, xxiii, pt. II (206), QQ. 11232-3.

¹² *Parl. Papers* 1846, xxviii (691), 176.

¹³ Hall, *Five of the Leewards*, 41-5, 48.

¹⁴ Starkey, *Barbados*, 117-18; Bennett, *Bondsmen and Bishops*, 133-5; Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), QQ. 1740-55.

¹⁵ At least on Barbados, where it had been reported that even the slaves 'proudly arrogate a superiority above the negroes of the other islands': Pinckard, *Notes*, ii. 278.

provision-ground tradition offered the estates a much more severe test. Jamaican planters had argued most stridently that immediate emancipation would be ruinous to export agriculture; apprenticeship was designed largely for their benefit.¹⁶ Even so, when this grace period came to an end, many of them showed a surprising measure of self-assurance: 'In the Parish of St. Thomas-in-the-East there are a great number of very poor estates, and the proprietors entertained the hope when freedom came, that although they might lose money for a year or two, after that things would settle down, and they would be able to carry on cultivation.'¹⁷ Sir Lionel Smith, appointed as governor in 1836, seemed a strict disciplinarian, and much more sympathetic than his predecessor to the planters' needs.¹⁸ Small-scale farming, it was believed, might be obstructed by a concerted refusal to sell land, while the imposition of heavy rents for houses and grounds would compel tenants to accept wage work. Apprentices hired themselves out in their free time regularly enough to maintain profits, if not the volume of production.¹⁹ Sentimental ties with estate villages and family graves were likely to continue. After all, on the coastal plains at least, most gangs had remained dutiful through the 1831-2 rebellion, sometimes even undertaking the manufacture of sugar (the uprising broke out at the start of crop) when militia duties called away the overseers.²⁰

Once apprenticeship came to an end, however, expectations built up in this way were quickly disappointed. The novel demands for rent combined with the inevitable disputes over wages to arouse bitter resentment, and white solidarity proved of little value in enforcing a strong line. Even if sugar planters wished to keep their property intact, for many colonists emancipation was obviously and immediately ruinous. Coffee growers,

¹⁶ P. D. Curtin, *Two Jamaicas: The Role of Ideas in a Tropical Colony, 1830-1865* (Cambridge, Mass., 1955), 90; Burn, *Emancipation and Apprenticeship*, 10.

¹⁷ *Parl. Papers* 1842, xiii (479), Q. 4806. See also V. E. Chancellor, 'Slave-owner and Anti-slaver: Henry Richard Vassall Fox, 3rd Lord Holland, 1800-1840', *Slavery and Emancipation*, i (1980), 271.

¹⁸ Goulburn MSS, III/4Q, E. MacPherson to H. Goulburn, 11 Jan. 1837.

¹⁹ Burn, *Emancipation and Apprenticeship*, 271.

²⁰ Turner, *Slaves and Missionaries*, 159; Clarendon MSS, Dep. c 389, W. Ridgard to J. F. Barham, 10 Feb. 1832; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834, on the slaves of Fish River estate, Hanover parish; *Parl. Papers* (House of Lords) 1831-2, cccvi (127), 588-9; Goulburn MSS, III/3T, A. Bayley to H. Goulburn, 16 Jan. 1832.

or small settlers who had made up an income from jobbing gangs hired out on the estates, were glad to cut their losses, and many freemen could pay good prices for land. Missionaries, anxious to keep their congregations together, encouraged co-operative purchase and subdivision.²¹ By the mid-1840s two-thirds of the population formerly resident on the plantations had moved away, establishing thousands of new holdings; attempts to collect rent from those who remained behind proved futile and were quickly abandoned. There could be no question of keeping up the old subordination. Most ex-slaves still sought estate work from time to time, if only as a supplementary income, but to the exasperated planter it seemed that they did so entirely on their own terms, ignoring his convenience. 'Sometimes they sit down in their houses; sometimes they walk about, saying they are free men.'²² 'They like holidays to celebrate emancipation [in August], and they take holidays at Christmas and at Easter, and during those times they are going about the country and galloping about the roads on their own horses.'²³

To compound the planters' difficulties in keeping a labour force, the sugar market began to move sharply against them. At emancipation the West Indies and Mauritius almost monopolized the British sugar market, so the metropolitan consumer bore the cost of the apprentices' reduced work rate. But in 1836 the duties on East Indian sugar were lowered to match those on imports from other British colonies, and scarcity encouraged this alternative source of supply. In the early 1840s the West Indies met less than two-thirds of British consumption, while at the same time demand was curtailed by industrial recession. After averaging 36 shillings a hundredweight during apprenticeship, and touching 57 shillings in the autumn of 1840, the wholesale sugar price fell back sharply (Fig. 12).²⁴ Then in 1846 the decision was taken to equalize import duties on colonial and foreign produce over the next five years. For the British West Indies this loss of fiscal privilege came as a shocking blow, open-

²¹ Eisner, *Jamaica, 1830-1930*, 193, 211; Green, *British Slave Emancipation*, 298-300; Hall, *Free Jamaica*, 162.

²² *Parl. Papers* 1842, xiii (479), Q. 4728.

²³ *Parl. Papers* 1847-8, xxiii, pt. I (167), Q. 4497.

²⁴ Revenue, Population and Commerce of the United Kingdom (for 1835 etc.), *Parl. Papers* 1837-8, xlvii (371), etc.; *Parl. Papers* 1847-8, xxiii, pt. III (245), Q. 12149; Deerr, *History of Sugar*, ii, 531; Green, *British Slave Emancipation*, 229.



FIG. 12. London Price of Muscovado Sugar, 1800-1900

Source: Deerr, *History of Sugar*, ii. 531; Ward, *Poverty and Progress*, 9.

ing up the prospect of unrestrained competition from the slave-owners of Cuba and Brazil. The sugar price quickly declined to a little more than 20 shillings per hundredweight, West Indian credit failed, and planters became embroiled in new labour disputes as they tried to hold out against misfortune by cutting rates of pay. Sugar estates began to cease production in large numbers, for the first time since the early 1830s.²⁵

The crisis was felt most acutely on Jamaica. With local opportunities for economic independence, its estate workers were much less likely than those of Barbados and the Leeward Islands to accept reduced wages. Elsewhere—in the Windward Islands, Trinidad, and British Guiana—proprietors also contended with

²⁵ Green, *British Slave Emancipation*, 234-9. For the infrequency with which estates were given up between 1834 and 1845, and the subsequent acceleration in the rate of failure, see Sturge and Harvey, *West Indies in 1837*, 194, 310; *Parl. Papers* 1842, xiii (479), QQ. 4537, 4742, 5060, 5208, 5445-51, 6777, 7656; Hall, *Free Jamaica*, 82.

an emerging peasantry, but Jamaica had the largest proportion of indebted, worn-out estates. Moreover these material weaknesses were aggravated by political complications. Since the end of apprenticeship planters had been proposing immigration to the Caribbean as the best solution for the labour problem. A few thousand recruits arrived, most of them from Africa and India, with Jamaica and British Guiana as the main destinations, although the experiment proved of little value. The numbers introduced were insufficient, and employers incurred heavy expenses to obtain workers over whom in practice they had only limited control. But in 1846 the imperial government, alarmed by the estates' plight, offered a reinforced immigration programme to compensate for the equalization of the sugar duties. Public loans would subsidize the passage costs from India, the most promising source, and immigrants would be bound more strictly than before, by indentures requiring at least five years' service on the estates.

In British Guiana and Trinidad, where constitutional arrangements gave planters a determining influence on policy, the scheme was accepted promptly, and together with new, more efficient processing equipment it made possible the renewed growth of sugar exports. Over the next half century more than 300,000 indentured immigrants reached these colonies, to provide the estates with a dependable source of field labour, while Creoles came forward on an irregular basis, most frequently at the cane harvest.²⁶ In Jamaica, on the other hand, too many properties seemed quite beyond redemption (the earlier experiments with immigrant workers had been conspicuously unsuccessful). Also during the later 1840s and early 1850s Jamaica's legislative Assembly was paralysed by internal disputes between planting interests, sometimes called the 'country party', and a 'town party' of merchants and professional men, many of them Jewish or coloured, who claimed to represent the small settlers. The town party disliked indentured immigration as a costly device to perpetuate estate hegemony, while many planters hoped to provoke a constitutional crisis, and the Assembly's abolition, by the drastic retrenchment of public expenditure. Therefore the loan offered by the British government was not

²⁶ Green, *British Slave Emancipation*, 278-93; Adamson, *Sugar without Slaves*, 52-6, 106-7, 170-80; Wood, *Trinidad*, 108-25.

taken up, and no scheme of subsidized immigration could be agreed for Jamaica until 1861. By this time half the island's sugar estates had failed, and sugar exports had fallen to 25,000 tons per annum, little more than a third of their level at the time of emancipation.²⁷

Yet despite the predictions of general ruin current about the time of the Sugar Duties Act, planters in other colonies adjusted more successfully to free trade, even where they made little use of indentured immigrants. By the 1850s sugar exports from Barbados and the Leewards were rising strongly. On the Windward Islands, similar to Jamaica in geography and patterns of settlement, the estates had almost recovered their pre-emancipation levels of activity by the 1870s.²⁸ For the British West Indian sugar industry as a whole, later nineteenth-century developments would prove more damaging than the loss of slavery and tariff protection (Table 35). From the 1880s European beet sugar, artificially encouraged by tax concessions, entered international markets in large quantities, with drastic effects upon the price level (Fig. 12). To remain competitive, cane growers were required to take full advantage of new processing technology. Steel had become cheap enough to lay down field railways, capable of supplying a central sugar works from a much enlarged field area. At the same time the invention of the triple expansion steam engine and better equipment for vacuum boiling made possible radical efficiency improvements in manufacturing, provided that a sufficient scale of operation could be achieved. More powerful mills extracted a greater proportion of juice from the canes; the vacuum pan saved fuel and labour, yielding much higher grades of sugar than did the open cauldrons of the muscovado process. While these innovations allowed Cuba, with its great tracts of level land, to realize its potential as a sugar producer, they were rarely feasible in the British West Indies. Much of the terrain here was too irregular for field railways; financial and legal uncertainties impeded the necessary amalgamation of long-established muscovado estates into larger holdings.²⁹

²⁷ Green, *British Slave Emancipation*, 242–9, 356–68; Hall, *Free Jamaica*, 80–115.

²⁸ Among the Windward Islands, only Grenada's sugar exports had been much reduced by this time, and here cocoa was becoming established as an alternative estate crop. For the limited importance of indentured labour in the British West Indies, apart from British Guiana and Trinidad, see Green, *British Slave Emancipation*, 284.

[See p. 242 for n. 29]

TABLE 35. *Exports of Sugar from the British West Indies, 1820-1899*
(Tons per Year)

	Barbados	Leeward Islands	Jamaica	Windward Islands	Trinidad, British Guiana	British West Indies: Total
1820-9	11,946	16,910	72,051	32,495	50,846	184,248
1830-9	18,696	15,794	58,841	26,405	66,356	186,092
1840-9	17,353	15,789	32,158	17,061	50,606	132,967
1850-9	31,261	17,187	24,447	17,604	68,828	159,327
1860-9	38,216	19,776	25,766	17,842	101,910	203,510
1870-9	41,108	22,074	24,281	21,558	134,489	243,510
1880-9	54,789	29,048	19,974	16,067	164,911	284,789
1890-9	50,451	28,858	20,546	8,485	151,808	260,148

Source: Deerr, *History of Sugar*, i, 193-203. For the early part of this period Deerr's figures correspond to British imports.

However, at the mid-century all this lay in the future. The vacuum pan, first introduced in the 1830s, was not yet decisively superior to the Jamaican train, except in the humid climate of British Guiana. The results from experiments with centralized milling seemed rather disappointing. Contemporary steam engines, in any case only a slight improvement on wind or water power, worked economically on the crop from just a few hundred acres of cane. Enhanced performance might still be secured, at modest expense, within the framework of traditional methods and ownership patterns, for example by attaching an extra roller to an existing mill, or by the use of centrifugal driers to accelerate the separation of the molasses from open-pan muscovado.³⁰ So how were the estates' chances of survival during the first decades after emancipation determined, and why did Jamaican planters show so little resilience? It is clear that coercive methods were not sufficient by themselves to maintain

²⁹ R. W. Beachey, *The British West Indies Sugar Industry in the Late Nineteenth Century* (Oxford, 1957).

³⁰ Green, *British Slave Emancipation*, 58-9, 210-13; Eisner, *Jamaica, 1830-1930*, 297; Hall, *Five of the Leewards*, 110-11; Adamson, *Sugar without Slaves*, 172-88; Beachey, *British West Indies Sugar Industry*, 72-3; *Parl. Papers* 1847-8, xxiii, pt. I (123), Q. 7505. In the 1890s it was reckoned that a muscovado works could make about 7.3 tons of sugar per 100 tons of cane, a 50% improvement in the extraction rate since the 18th century. By this time, however, the yield in central factories had reached 10.5 tons of sugar per 100 tons of cane: Starkey, *Barbados*, 163.

sugar output. Ex-slaves everywhere gained tactical strength in the labour market, requiring some measure of conciliation and inducement from the prospective employer. In turn, the planter's ability to develop an appropriate recruitment style was shaped by the economic legacy of ameliorated slavery, through the freed people's consumption habits, and the work effort needed to make his estate pay.

In earlier debates on West Indian policy a good deal of attention had been given to the slaves' potential as consumers.³¹ Planting interests, arguing that freedom should be postponed for the time being, claimed that the slaves did not as yet have enough of the 'artificial wants' that encouraged more civilized people to labour. This argument lay rather awkwardly with glowing accounts both of lavish estate allowances, and of the returns yielded by the opportunity to cultivate provision grounds. Humanitarian advocates could be equally disingenuous. In public they reported poverty and degradation, the scanty clothing of field gangs, for example;³² in private their emphasis was rather different. The Revd William Knibb, a newcomer to Jamaica in 1825, described the slaves' elaborate weekend dress and entertainments: 'At their dances they have confectionary of every kind, and wine of every description, many of them will not drink rum as it is mean.'³³ Another missionary wrote home in similar terms: 'I expected to find at my arrival an ignorant, depressed, and miserable set of people, whose knowledge was as little as their condition was destitute. It is not saying enough to assert I was disappointed; I was astonishingly disappointed.'³⁴ It could be disputed whether these symptoms of prosperity occurred despite or because of slavery. Did estate tutelage provide the necessary context for standards of decency to evolve, or did the vigour of marketing within the islands show that the slaves' acquisitive instincts were already deeply rooted? Whatever the case, certain popular tastes had evidently become established, and the intelligent planter might turn them to his advantage.

³¹ Select Committee ... upon ... the Extinction of Slavery, *Parl. Papers* 1831-2, xx (721), QQ. 1836-7, 1961, 2097.

³² See e.g. *Parl. Papers* (House of Lords) 1831-2, ccvi (127), 503-4, 526.

³³ W. Knibb to Miss Spurrier, 13 Sept. 1825; Green, *British Slave Emancipation*, 31-2.

³⁴ Letter from the Revd John Jenkins, 21 Aug. 1824; Turner, *Slaves and Missionaries*, 40.

On Barbados in 1833, with freedom imminent, it was proposed to encourage the slaves' 'strong desire to dress themselves in finery'.³⁵ On Jamaica during apprenticeship a proprietor gave money payments instead of the usual rations in kind, 'and in order to accustom his people to spend money, as well as earn it, he has established a shop on one or more of his estates'.³⁶ For its time this was an exceptional initiative, but from August 1838, in the first months of full freedom, even the most sceptical observers had to acknowledge the enthusiasm for purchased goods among the new population of wage earners. There were striking increases in the sale of such imported 'superfluities' as salt meat, wheat flour, rice, beer, spirits, cotton cloth, soap, and candles.³⁷

To gratify a propensity to bodily decoration and a thirst for wine, malt liquors, and other delicacies of the palate, the peasantry have been induced to give many days' labour in the week which would otherwise have been passed in idleness . . .³⁸

The Labourer here [in Jamaica] goes out to [estate] labour for such time only as he can spare from the cultivation of his own grounds: and if the desires of the Negroes were limited to what Labourers in other Countries are forced to be content with: if they were not fond of Luxuries, and Smart Clothes, and good Furniture, and riding Horses, or had not the better motives of educating their Children or supporting their Church, they would hardly have any inducement to labour.³⁹

So estate stores multiplied, kept by the overseer, his wife, or mistress, as a perquisite of office, or by outside traders.⁴⁰ (Retailing also provided a useful source of small change for the

³⁵ Handler, Lange, and Riordan, *Plantation Slavery in Barbados*, 95.

³⁶ Sturge and Harvey, *West Indies in 1837*, 194.

³⁷ Hall, *Free Jamaica*, 165-6; Wood, *Trinidad*, 48-9. Information about British West Indian imports has been taken from official records of colonial trade, as specified for Tables 36 and 37.

³⁸ Report from Barbados magistrates, 1839: B. M. Taylor, 'Emancipation in Barbados, 1830-1850: A Study in Planter Accommodation', Ph.D. thesis (Fordham University, 1973), 221.

³⁹ Governor Sir Charles Metcalfe to Lord John Russell, 30 Mar. 1840: Hall, *Free Jamaica*, 159.

⁴⁰ Hall, *Free Jamaica*, 208-9; H. H. Breen, *St. Lucia: Historical, Statistical, and Descriptive* (1844), 312-13; E. B. Underhill, *A Letter addressed to the Rt. Honourable E. Cardwell, with Illustrative Documents on the Condition of Jamaica and an Explanatory Statement* (1865), 66. On St Vincent in 1863 the stores' stock included pork, beef, fish, butter, biscuits, tobacco, pipes, cigars, porter, wine, and rum: Correspondence . . . relating to the recent Riots at St. Vincent's . . ., *Parl. Papers* 1863, xxxviii (509), 75-131, *passim*.

Indian life conveyed to the British public kept a political importance, but now they had less fortunate effects. The ex-slave's prosperity was often described, by stipendiary magistrates, colonial governors, and witnesses to parliamentary inquiries:

Are not the indulgence in luxuries and expenditure of money, in the various ways you have stated, proofs that he does earn money beyond what would be expected to be obtained by free labourers in most countries?—I do not think he earns a greater amount of money in money.

But he gains money's worth?—He gains money's worth by his own industry, more than a labourer can here [in Great Britain] . . .

What with the four-post bedsteads, the sideboards, the mahogany chairs, the riding-horses, the brood-mares, the provision grounds, and the other advantages, whether arising during slavery, or during apprenticeship, or during freedom, you consider the labourers in Jamaica at present better off than the labourers in this country?—Decidedly; I should be very sorry to see them as badly off as the labourers here; half of them starving.⁵⁷

Such testimony exaggerated the novelty of West Indian popular comforts by attributing them, for example, to the overtime earnings which became available under apprenticeship. Levels of consumption did increase in the later 1830s, but they built upon previously established resources and habits.⁵⁸ Reporters' perspectives changed to a greater extent than the phenomena under observation. Liberal opinion, reluctant to admit any symptoms of welfare on the sugar islands while slavery continued, now wished to vindicate the 'great experiment' of emancipation by showing that the freed slaves were energetic and acquisitive, quite worthy of their new state. (Planters, arguing for immigration schemes and the continuation of protective duties, also stressed the Creole's high standard of living, but they had been doing so for many years.)

Whatever their authors' intentions, the accounts of free

⁵⁷ Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), QQ. 6157–8, 6275, evidence of the Revd William Knibb. See also Green, *British Slave Emancipation*, 306–7.

⁵⁸ Thus while more flour, salt meat, clothing, soap, and candles were shipped to the West Indies after emancipation, fish imports declined. Also a significant number of slaves had owned horses: see above, ch. 7 nn. 37, 43; de la Beche, *Negroes in Jamaica*, Appendix E; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834.

society sent across the Atlantic did much harm. From the mid-1830s the British consumer was obliged to buy sugar at an increased price, for the benefit, so it might seem, of people who were both prosperous and idle, while during the early 1840s the northern manufacturing towns suffered a painful recession in trade. Soon metropolitan opinion concluded that enough had been done for the ex-slaves. Their easy circumstances gave a decisive argument in favour of equalizing the sugar duties.⁵⁹ A market was ready for Thomas Carlyle's view of West Indian populations:

Sitting yonder with their beautiful muzzles up to the ears in pumpkins, imbibing sweet pulps and juices; the grinder and incisor teeth ready for ever new work, and the pumpkins cheap as grass in those rich climates: while the sugar-crops rot round them uncut, because labour cannot be hired, so cheap are the pumpkins;—and at home we are but required to rasp from the breakfast-loaves of our own English labourers some slight 'differential sugar-duties', and lend a poor half-million or a few poor millions now and then, to keep that beautiful state of matters going on.⁶⁰

The articulation of modern racist doctrine had received a powerful impetus.

Carlyle's sour emphasis on the West Indian labourers' relative affluence had a basis in fact when he wrote, and for some time to come, until industrial capitalism was more securely established. But he was wrong to imply that Caribbean prosperity came simply as a gift of tropical nature. The smallholders' livestock, provision grounds, and fruit trees were the results of personal effort under ameliorated slavery. So were the sugar estates, still the main means within the West Indies to secure a cash income, for the cane was never left entirely neglected. Even on Jamaica a rump of the sugar industry survived, through production methods developed before emancipation and through the ability which they gave to recruit free labour. Technical

⁵⁹ W. A. Green, 'Was British Emancipation a Success? The Abolitionist Perspective', in Richardson (ed.), *Abolition and Its Aftermath*, 190-6; Levy, *Emancipation, Sugar and Federalism*, 99.

⁶⁰ 'Occasional Discourse on the Nigger Question', in T. Carlyle, *Critical and Miscellaneous Essays* (4 vols., 1893-4), iv, 81. The 'Discourse' was first published as an article in *Fraser's Magazine* (Dec. 1849).

refinements did not preserve slavery. However, once its abolition had been enacted, the legacy of amelioration would help to determine the symbiosis between plantation and peasantry which, for better or worse, has shaped English-speaking West Indian society ever since.

APPENDIX

Slave Listings

Reference has been made to the following listings of estate slave populations. All the properties were sugar plantations, unless stated otherwise.

Estate

Parham, Antigua 1737, 1750
 Blue Mountain, Jamaica 1760
 Dukenfield Hall, Jamaica 1764

 Mesopotamia, Jamaica 1769-1832
 Turners Hall, Barbados 1771-81,
 1817
 Stapleton, Nevis 1778
 York, Jamaica 1778, 1782, 1820,
 1829
 Bossue, Jamaica 1784
 Frontier, Jamaica 1788
 Worthy Park, Jamaica 1784-1831
 Romney, St Kitts 1788, 1817
 Island, Jamaica 1789-1832
 Spring, Jamaica 1795

 Newton and Seawells, Barbados
 1796
 Waltham, Grenada 1798, 1804,
 1815
 Perrins, Jamaica 1799, 1833
 Good Hope, Jamaica 1804
 Melville Hall, Dominica 1815

 Mount Carmel, Jamaica 1815
 (coffee)
 Ferry, Jamaica 1817 (pen)

 Irwin, Jamaica 1821

Source

Tudway MSS, Boxes 14, 16
 Fitzherbert MSS, W1/9
 Cooper-Franks MSS, Acc. 775/
 931
 Clarendon MSS, Dep. b 36
 Fitzherbert MSS, W1/17; PRO,
 T. 71/522
 Stapleton-Cotton MSS, Bundle 16
 Gale-Morant MSS, 3/c, 3/d

 Tharp MSS, R.55.7.123.3
 Stirling of Keir MSS, T-SK 15/38
 Craton, *Invisible Man*, 180-4
 Romney MSS, A 140, A 144
 Clarendon MSS, Dep. b 36
 Smyth MSS, AC/WO 16(27)
 166(d)
 Newton MSS, 523/288, 292

 Home of Wedderburn MSS, GD
 267/5
 Fitzherbert MSS, W1/20
 Tharp MSS, R.55.7.123.2
 Balfour-Melville MSS, GD
 126/3/1
 Nantes-Wylde MSS, D 396

 Airlie MSS, GD 16/27/291,
 Bundle 1
 Higman, *Jamaica*, 198

Green Park, Jamaica 1823	Patterson, <i>Sociology of Slavery</i> , 60
Good Hope, Trinidad 1825	Cochrane MSS, MS 2303, fo. 42
New Grant, Trinidad 1825	Cochrane MSS, MS 2303, fo. 39
Vreedenhoop, Demerara 1825	Gladstone MSS, CH 55
Wales, Demerara 1826	Gladstone MSS, CH 55
Mount Hindmost, Jamaica 1827	Gale-Morant MSS, 4/b
Gale's Valley, Jamaica 1829	Gale-Morant MSS, 3/c
Martin Byams, Antigua 1830	PRO, T. 71/1542
Rose Hall, Jamaica 1832	Higman, <i>Jamaica</i> , 194
Grange Hill, Jamaica 1833 (pen)	Fitzherbert MSS, WI/20

ENDNOTES

1. *Thomas Thistlewood*. A practical difficulty in studying the evolution of British West Indian slavery is that estate records are relatively scarce before the 1780s. Thistlewood's Jamaican diaries, an almost unbroken sequence of daily entries from 1750 until his death in 1786, are with their associated documents by far the largest private British West Indian archive known to survive from the middle of the eighteenth century. They are extensively drawn on here for evidence of the conditions that prevailed before the onset of amelioration. How reliable an impression are the diaries likely to give of current practice? Thomas Thistlewood migrated from England to Jamaica in 1750 at the age of 29. Between 1751 and 1767, with one brief interruption, he was employed in the parish of Westmoreland as the overseer (principal manager) of a sugar plantation called Egypt. Then he retired to spend the last 19 years of his life nearby as the owner of a small provision estate and slave gang. Egypt, with about 130 acres of cane land, produced some 50 tons of sugar a year, 20% less than the average for a mid 18th-century Jamaican plantation. The estate was prevented by its small size from keeping abreast of contemporary technical developments, and stopped making sugar in the 1780s. Clearly Egypt had become a rather second-rate enterprise, even by the 1750s and 1760s. On the other hand, under Thistlewood it matched local standards of efficiency in terms of the output of sugar per worker and the natural reproduction of its slaves. Thistlewood became well regarded as a planter. He received several offers of better-paid positions on larger estates, but declined them because of an attachment to his slave housekeeper at Egypt. Nevertheless, while he may have been more painstaking than the average overseer (the compilation of his remarkable diaries is one sign of this), he does not appear especially original or imaginative. During his early years in Jamaica he carefully copied out a number of manuals on sugar planting, and he frequently recorded advice from more experienced neighbours. Egypt's owners lived nearby and intervened spasmodically in its affairs, but at this time resident proprietors were still more numerous than absentees. Thus while the Thistlewood archive probably understates the technical progress achieved in Jamaican agriculture, it should give an adequate general impression of contemporary

- slavery and estate management. For further details see J. R. Ward, 'A Planter and His Slaves in Eighteenth-century Jamaica', in T. C. Smout (ed.), *The Search for Wealth and Stability* (1979), 1-20.
2. *Slave Population during the American War of Independence*. When the war broke out planters predicted that if supplies of imported food were restricted many slaves would perish; after its conclusion they claimed that heavy losses had in fact occurred, much of their evidence on this point being presented during the late 1780s to the parliamentary and Privy Council investigations of the slave-trade. For example, it was alleged that some 15,000 of Jamaica's 256,000 slaves had died as a result of the scarcities caused by the hurricanes of 1780 and succeeding years: Sheridan, 'Crisis of Slave Subsistence', 632-3. However, the records of individual estates show that, apart from Antigua, slave mortality was on average no higher during the war and its aftermath than in the preceding period: Bennett, *Bondsmen and Bishops*, 73; Pares, *West-India Fortune*, 124; Craton, Walvin, and Wright, *Slavery*, 105; Privy Council Report, *Parl. Papers* 1789, xxvi (646a), pt. III, Barbados; Fitzherbert MSS, W1/17, Turners Hall accounts 1776-82; Gale-Morant MSS, 3/c, York accounts 1776-83; Newton MSS, 523/39-45, Newton and Seawells accounts 1776-82; Tudway MSS, Box 9, Parham accounts 1776-83; above, 66. It is true that tax returns and official reports suggest a decline in numbers on most islands between 1775 and the mid-1780s, reversing the pre-war trend: Edwards, *West Indies*, i, 345-6; Goveia, *Leeward Islands*, 85, 121, 203; Pares, *West-India Fortune*, 92; Sheridan, 'Crisis of Slave Subsistence', 632. But this seems to have occurred mainly through the reductions made, at a time of economic insecurity, in the customary purchases of new slaves to 'keep up the stock': Craton, *Testing the Chains*, 371 n. 6; Starkey, *Barbados*, 105; Clarendon MSS, Dep. c 357, J. Van Heelen to J. F. Barham, 7 Apr. 1781; Vassall MSS, W. Vassall to J. Wedderburn, 6 May 1783. In public testimony the planters evidently exaggerated wartime losses, to emphasize those causes of mortality which lay beyond their control, and required the continuation of the slave-trade if the West Indian colonies were to be maintained. See also above, 127-8.
 3. *Weights and Measures of Purchased Food*. Calculations of food imports and allowances have been based on the following assumptions about measures and container capacities:

Barrel of wheat flour	200 lbs.
Barrel of corn or corn meal	4 bushels
Puncheon of corn meal	15 bushels
Tierce of rice	555 lbs.

Barrel of pickled herrings	230 lbs.
Quintal of dried fish	100 lbs.
Hogshead of dried fish	750 lbs.

Sources: Bean, 'Food Imports', 582, 590-1; J. J. McCusker, 'Weights and Measures in the Colonial Sugar Trade: The Gallon and the Pound and Their International Equivalents', *William and Mary Quarterly*, 3rd Ser. xxx (1973), 606; Monson MSS, Thistlewood Diaries, 18 Mar. 1751, 24 Sept. 1756, 27 Nov. 1756, 10 Apr. 1765, 25 Mar. 1766; Romney MSS, A 139, 162-71, accounts and invoices 1794-1832; Tudway MSS, Box 56, factors' report 1822.

4. *Slave Diet.* A number of attempts have been made to describe and evaluate in detail British West Indian slave diet: Dirks, 'Resource Fluctuations', 138-9; Kiple and Kiple, 'Deficiency Diseases'; Kiple, *Caribbean Slave*, 76-88; Sheridan, *Doctors and Slaves*, 169-73. However, such exercises are frustrated by inadequate information about food supplies other than those made available from the master: Higman, *Slave Populations*, 205. Dirks and Sheridan, looking in particular at the Leeward Islands, seem to assume that distributed allowances here were intended to meet the whole of the slaves' consumption. They conclude that the rations remained grossly insufficient, but without taking any account of provision grounds or other spare-time activities. Kiple, recognizing the limitations of this approach, derives from the planters' own assertions an 'ideal' slave diet, comprising what he terms a 'core' of allowances in addition to 'vegetable supplements' raised from provision grounds. He suggests that even if a slave secured the most generous standards of maintenance reported by the masters—and their claims were presumably over-optimistic—dietary imbalances would still have caused malnutrition. For example, much of the vitamins and amino acids in imported fish, the main source of protein, were eliminated by pickling and prolonged storage in heat. Thus even with a large consumption of vegetable carbohydrates, the slaves lacked sufficient thiamine for their metabolism.

Kiple's argument, although more refined than those of Dirks or Sheridan, is still unsatisfactory. He puts special stress upon the low fat content of the West Indian diet and the lack of fresh animal protein. 'Only in fringe areas of Caribbean slavery such as the Bahamas did slaves have the free time to fish or raise animals and thus add complete protein to the yams, taro, plantains, and perhaps corn or millet that they grew': Kiple, *Caribbean Slave*, 76. However, even in the mid-18th century some Jamaican slaves kept pigs or cattle: Monson MSS, Thistlewood Diaries, 27 June 1754, 21 Mar. 1758, 6 Nov. 1760, 4 July 1767; by the early 19th century their hold-

ings of animals had increased. Slave livestock was significant, although less numerous, on the smaller islands: Pares, *West-India Fortune*, 122; above, 115, 199-200. Kiple fails to account for other local details. Shortly before emancipation births had come to exceed deaths among the slaves of Barbados, while on Jamaica natural decrease continued. He attributes the difference to the Jamaican planters' 'increasingly dismal financial straits', which prevented them from making sufficient improvements in feeding standards. 'In Barbados, by contrast, amelioration was begun earlier with greater quantities of food and better quality a major part of the "amelioration" program': Kiple, *Caribbean Slave*, 118. Yet allowances of preserved fish—whatever their nutritional value, the most easily measured category of planters' food expenditure—increased more on Jamaica than on Barbados: above, Tables 7, 30. Furthermore, on Barbados slaves had fewer opportunities to raise livestock for themselves. Less severe work rather than especially generous rations was probably this colony's main advantage. The uncertainties both of the historical evidence and of modern dietetics preclude any exact assessment of West Indian feeding rates. No doubt they were still deficient in the early 19th century, judged by later standards, but there is no adequate way of estimating the shortfall, or its evolution over time. So this study gives most emphasis to various circumstantial indicators of the slaves' condition, demography in particular.

5. *The Slave Population of Jamaican Sugar Estates on the Eve of Emancipation*. Indicators of demographic change for Jamaica during the registration period are summarized in Table 38. Details of age

TABLE 38. *Slave Mortality and Natural Increase in Jamaica, 1817-1832*
(Rates per 1,000)

	Jamaica		12 Jamaican sugar estates		76 Trelawny sugar estates	
	Death rate	Natural increase	Death rate	Natural increase	Death rate	Natural increase
1817-20	24.3	-0.7	27.6	0.0	27.9	-2.8
1820-3	25.9	-3.1	29.1	-3.3	32.8	-8.4
1823-6	25.1	-2.1	33.8	-5.9	33.5	-7.7
1826-9	25.6	-3.4	34.1	-9.9	30.2	-6.7
1829-32	28.0	-4.8	n.d.	n.d.	36.6	-11.8

Sources: Higman, *Jamaica*, 102, 106; *Parl. Papers* 1831-2, xx (721), 576-7; *Parl. Papers* (House of Lords) 1831-2, ccvii (127), 262-262b; Registration Returns for Trelawny parish 1829-32: PRO, T 71/241-2.

distribution appear in the published account relating to the twelve sugar estates. The printed abstract for Trelawny distinguishes Africans from Creoles, but without recording age structure. So standardized mortality rates on the Trelawny properties have been estimated by applying the information about age structure reported for the twelve-estate sample (Table 39). It appears that average

TABLE 39. *Standardized Mortality on Jamaican Sugar Estates, 1817-1832*
(Rates per 1,000)

	12 Jamaican sugar estates			76 Trelawny sugar estates		
	Africans	Creoles	% of Africans	Africans	Creoles	% of Africans
1817-20	34.3	23.9	33.1	41.6	21.5	32.0
1820-3	32.6	26.5	30.1	43.2	27.0	28.5
1823-6	40.8	27.6	26.9	47.1	26.2	25.0
1826-9	53.5	25.6	23.3	45.0	23.2	21.6
1829-32	n.d.	n.d.	n.d.	50.2	26.1	18.2

Sources: As for Table 38.

standardized mortality among Creoles on Jamaican sugar estates rose by 15-20% between the triennia 1817-20 and 1820-3; then it declined a little. African mortality, on the other hand, rose steadily throughout the registration period. There was no significant change in fertility. Probably the Creoles, by now the main source of labour, were affected more severely by the declining availability of able-bodied workers in the early 1820s. Over the longer term, however, they benefited more than the ageing Africans from the encouragement given to cultivate grounds, and suffered less from the planters' curtailed purchases of flour, meal, and grain, the usual emergency rations for poorer slaves. In 1829-32 the annual rate of natural increase among creole slaves on Trelawny sugar estates stood at 2 per 1,000. It could therefore be expected that, with all other things being equal, the estates' population would start to grow once the remaining Africans had died off, and this conclusion applies also to Jamaica as a whole: Higman, *Jamaica*, 61-3, 98, 134-8.

6. *Consumption Standards in the British West Indies and Great Britain, c.1800-50*. Attention is concentrated on the experience of slaves or ex-slaves and British manual workers, the usual reference points for contemporaries who tried to compare popular welfare in the two regions. Sources of information about British workers' budgets

include: F. M. Eden, *The State of the Poor* (3 vols., 1797); J. C. McKenzie, 'The Composition and Nutritional Value of Diets in Manchester and Dukinfield 1841', *Transactions of the Lancashire and Cheshire Antiquarian Society*, lxxii (1962), 123-40; R. S. Neale, 'The Standard of Living, 1780-1844: A Regional and Class Study', *Economic History Review*, 2nd Ser. xix (1966), 597-8; J. Burnett, *A History of the Cost of Living* (Harmondsworth, 1969), 259-65; T. R. Gourvish, 'The Cost of Living in Glasgow in the Early Nineteenth Century', *Economic History Review*, 2nd Ser. xxv (1972), 68-71. For the British West Indies we have official records of retained imports and details of slave allowances from estate papers (above, 105-8, 114-18, and Tables 7, 30, 36-7).

Imports of any particular item are not an exact measure of the slaves' consumption because, apart from the problem of local production, the West Indies had a white minority. However, in our period 85% of the British West Indies' inhabitants were slaves, or ex-slaves and their descendants. Most of the West Indian data are for whole populations; most of the British budgets relate to nuclear families, and therefore include a larger proportion of children with below-average physical requirements. To accommodate the discrepancy, West Indian consumption figures should be scaled down by about 15% for purposes of comparison with their British equivalents. (Children aged 0-9 comprised 20-25% of West Indian populations, and about 50% of British budget families. In the West Indies young slave children received about half a standard adult ration: Craton, *Invisible Man*, 176-9; Fitzherbert MSS, WI/20, account of allowances at Perrins estate 1833.) British real wages increased decisively from about 1820, but for some groups, such as London artisans, improvements were quite modest before the mid-century, and many categories suffered high unemployment in the early 1840s: Lindert and Williamson, 'English Workers' Living Standards', 12-15; L. D. Schwartz, 'The Standard of Living in the Long Run: London, 1700-1860', *Economic History Review*, 2nd Ser. xxxviii (1985), 24-41.

Breadstuffs, Vegetables: weekly per caput consumption of bread, flour, oatmeal, and potatoes totalled 10-15 lbs. in British workers' families. West Indian slave dietaries allowed about 18 lbs. of flour or its equivalent per adult worker per week.

Meat, Fish, Butter, Cheese: in British workers' families annual per caput consumption of meat and fish ranged from 20 to 55 lbs., supplemented by 10-25 lbs. of butter, cheese, and lard, and also by some milk. By the early 19th century annual imports and rations of fish averaged about 60 lbs. per slave in the longer-settled West

Indian islands. Annual meat imports averaged about 10 lbs. per head, but under slavery most of these were probably reserved for the white people. By the 1850s annual imports of salt fish and meat to Barbados and the Leewards stood at 55 lbs. per head; in Jamaica they had declined to 50 lbs. by this time. West Indian imports of butter, cheese, and lard were always small, about 6 lbs. per head per annum. On the other hand, West Indian populations, especially in Jamaica, had considerable opportunities to supplement imported supplies of animal protein by raising their own livestock.

Clothing: annual expenditure per head on clothing by British workers' families averaged about £1.00. This would be equivalent to 11.9 yards of cotton cloth, 8.2 yards of woollens, and £0.14 worth of leather goods, taking the prices of British exports to the West Indies current in the period 1832-4, and the mid-19th-century pattern of British clothing expenditure estimated by Crafts, *British Economic Growth*, 106-7. Average annual retained imports of clothing per caput to the British West Indies between 1832 and 1834 have been calculated at 14.6 yards of cotton cloth, 8.7 yards of linen, 1.4 yards of woollens, £0.10 worth of leather goods, and £0.32 worth of other clothing, altogether costing £1.16 at current prices (above, Table 36).

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Indian life conveyed to the British public kept a political importance, but now they had less fortunate effects. The ex-slave's prosperity was often described, by stipendiary magistrates, colonial governors, and witnesses to parliamentary inquiries:

Are not the indulgence in luxuries and expenditure of money, in the various ways you have stated, proofs that he does earn money beyond what would be expected to be obtained by free labourers in most countries?—I do not think he earns a greater amount of money in money.

But he gains money's worth?—He gains money's worth by his own industry, more than a labourer can here [in Great Britain] . . .

What with the four-post bedsteads, the sideboards, the mahogany chairs, the riding-horses, the brood-mares, the provision grounds, and the other advantages, whether arising during slavery, or during apprenticeship, or during freedom, you consider the labourers in Jamaica at present better off than the labourers in this country?—Decidedly; I should be very sorry to see them as badly off as the labourers here; half of them starving.⁵⁷

Such testimony exaggerated the novelty of West Indian popular comforts by attributing them, for example, to the overtime earnings which became available under apprenticeship. Levels of consumption did increase in the later 1830s, but they built upon previously established resources and habits.⁵⁸ Reporters' perspectives changed to a greater extent than the phenomena under observation. Liberal opinion, reluctant to admit any symptoms of welfare on the sugar islands while slavery continued, now wished to vindicate the 'great experiment' of emancipation by showing that the freed slaves were energetic and acquisitive, quite worthy of their new state. (Planters, arguing for immigration schemes and the continuation of protective duties, also stressed the Creole's high standard of living, but they had been doing so for many years.)

Whatever their authors' intentions, the accounts of free

⁵⁷ Report from the Select Committee on West India Colonies, *Parl. Papers* 1842, xiii (479), QQ. 6157–8, 6275, evidence of the Revd William Knibb. See also Green, *British Slave Emancipation*, 306–7.

⁵⁸ Thus while more flour, salt meat, clothing, soap, and candles were shipped to the West Indies after emancipation, fish imports declined. Also a significant number of slaves had owned horses: see above, ch. 7 nn. 37, 43; de la Beche, *Negroes in Jamaica*, Appendix E; Gladstone MSS, CH 81, R. Gladstone to J. Gladstone, 28 July 1834.

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INDEX

- absenteeism and absentees 1, 13, 22,
35-7, 48-9, 64-8, 92-4, 120, 167,
214-15, 218, 258-61, 263-76
- Africa 33, 171, 224
see also slave trade from Africa
- Africans *see* slaves, Africans and
Creoles
- age structure of slave populations
128-9
- agriculture *see* sugar planting
- amelioration:
British opinion and 2-3, 7, 261-79
demographic results of 119-89
economics of sugar planting and
190-215
feeding standards and 105-18
as policy of slave and estate
management 2-7, 208-15
social results of 215-31
techniques of sugar planting and
61-104
- American War of Independence,
effects in British West Indies 40-2,
47, 62, 65-6, 77-9, 82, 109, 117,
121-3, 148 n., 201, 208-15 *passim*,
218, 228-9, 283
- Amity Hall plantation, Jamaica 93-4
- Antigua xii, 8, 27, 32, 47, 54, 78, 99,
191, 229
and American War of Independ-
ence 41, 65-6, 117, 148 n., 283
slave demography on 32, 142-5,
185, 225
slave feeding on 41, 64-74, 105-6,
117-18
sugar planting under slavery 64-
74, 102-3, 267
sugar planting after emancipation
235-6, 251, 259 n.
- anti-slavery 1-7, 29, 55-8, 208-9,
214, 219-32 *passim*, 259, 261-79
passim
- Anti-Slavery Reporter* 272
- apprenticeship of ex-slaves 165, 223,
233-7, 259-60, 277
- Argyle plantation, Jamaica 114, 224,
231 n.
- arrowroot 251
- attorneys 65, 92, 263-8, 274
- avocado pear 149
- Bahamas xii, 180, 270
- bamboo 82
- Baptists 200-1, 231
- Barbados xii, 32, 38-41, 51, 58, 78,
86, 99, 165, 190-1, 203, 207
ecological deterioration on 13-14
settlement of 8-15
slave demography on 122-3, 132,
135, 138, 142-5, 148-9, 153,
158-9, 170, 176-7, 183, 185,
188, 225
slave feeding on 19-22, 37, 106,
114-16, 192
slave rebellion on 216, 218, 221,
226-8, 275
sugar planting under slavery 6-7,
48, 61-5, 69-74, 91, 101-4, 159,
192, 194, 209-10, 213-15, 266-
7, 271-2
sugar planting after emancipation
234-6, 242, 244-5, 251
- Barbuda 180
- Barham, Joseph Foster (1729-89)
214
- Barham, Joseph Foster (1759-1832)
92, 214
- Beckford, Richard 30, 32, 35, 37 n.,
113, 162, 267
- Belize 33

- Berbice 43, 114, 139, 149, 225
see also British Guiana
- birth rate *see* fertility
- Blue Mountain plantation, Jamaica
 89, 93, 113, 126, 158, 280
- Boddington, William 266
- bookkeepers *see* white employees on
 sugar plantations
- borer worm 77, 264 n.
- Bossue plantation, Jamaica 113, 280
- Bourbon cane *see* sugar cane, vari-
 eties of
- Brazil 8-9, 12, 43, 46, 55-6, 100 n.,
 239
- bread 77-8, 116
see also wheat flour
- breadfruit 254
- breast-feeding *see* fertility, lactation
 and
- British Guiana xii, 6, 48, 98, 107,
 203 n.
 after emancipation 235-6, 239-42,
 246, 249-50
 sugar planting in, under slavery 91,
 101, 104
see also Demerara/Essequibo
- British Honduras xii
see also Belize
- British North America, trade with
 British West Indies 19, 22, 38, 49
see also American War of Inde-
 pendence
- British West Indies:
 British economic development
 and 1, 4-5, 261-3
 early settlement of 8-14
 sugar exports from 242
see also individual colonies
- Bull Dead plantation, Jamaica 175
- Bybrook plantation, Jamaica 32,
 264 n.
- cachexy *see* diseases among slaves;
 dirt-eating
- cane breaking 26-7, 199
- cane cutting, productivity in 195-8
- cane holing 15, 28, 61-98 *passim*,
 250, 269
- Canning, George 203 n., 273
- Carlyle, Thomas 278
- Carolina 10
- cassava 24-5
- cattle *see* livestock, pens
- Ceded Islands 38-40, 48, 77
 slave demography on 123-4, 136-
 7, 139-41, 148, 225
 sugar planting under slavery 91,
 96-8
see also Dominica; Grenada; St
 Vincent; Tobago
- children:
 of free labourers 252
 slave 30-1, 90, 155-9, 191, 215,
 222, 287
 white 215
see also infants, slave
- cholera 165
- Christmas *see* holidays for slaves
- Clarendon parish, Jamaica 83, 84, 87,
 225 n., 231, 254
- clarifier 103, 193
- clayed sugar *see* sugar, types of
- clothing:
 of free labourers 244
 of slaves 46-7, 151-3, 207, 210,
 243-7, 263, 288
 of whites 213-14
- coal 75, 82, 101, 187, 250
- cocos 109, 111
- Codrington plantations, Antigua 54,
 73-4
- Codrington plantations, Barbados
 21, 32, 106, 122, 127, 138, 154,
 198
- coffee planting 7 n., 38, 45, 56, 170,
 179-82, 222, 234, 238, 260
- Collinge, John 100 n.
- Colonial Office 56, 261, 273 n.
see also Great Britain, government
- coloured (mixed race) slaves 200,
 219, 226 n., 230
- consumption *see* diseases among
 slaves

- corn, Guinea (millet) 20, 63-5, 70, 73, 86, 108, 254
- corn, Indian (maize) 19-20, 41, 65, 108, 148-9
- cotton planting 7 n., 56, 170, 179-82, 222
- craftsmen *see* slaves, occupations of
- Craton, M. 125
- Creoles *see* slaves, Africans and Creoles
- Cropper, James 268 n.
- Cuba xii, 6, 43, 46, 56, 85-6, 239, 254
- Curtin, P. D. 143 n.
- death rate *see* mortality
- de la Beche, H. T. 203, 205
- Demerara/Essequibo 43, 54, 56, 58, 108, 111, 114, 199, 218, 221-2, 229, 258, 274-5
- slave demography in 124, 136-9, 146-7, 149, 180-2
- see also* British Guiana
- demography of slaves 24-6, 119-89 and perceptions of British West Indian slavery 1, 270-2
- theories relating to 35-6, 172
- see also* diseases among slaves; fertility; mortality
- Denbigh plantation, Jamaica 158
- diarrhoea *see* diseases among slaves, dysentery
- diet *see* feeding; fish; food gathering; food growing; livestock; mortality, and feeding
- Dirks, R. 284
- dirt-eating *see* diseases among slaves
- discipline *see* punishment
- diseases among slaves, 141-65
- consumption 146, 161
- dirt-eating/cachexy/*mal d'estomach*, 147, 153-4
- dropsy 21, 146, 155
- dysentery/diarrhoea 21, 66, 77, 146, 148, 149, 164, 226 n.
- fever 146
- influenza/pleurisy 146, 150
- leprosy/cocobay 147
- lockjaw/jawfalling 146, 163
- smallpox 146, 148, 164-5, 226 n.
- tetanus 130
- venereal disease 161, 171, 173
- worms 147, 162
- yaws 127, 146, 148, 161-2
- see also* medical care of slaves; mortality
- dismemberment *see* mutilation
- doctors 160-5, 185
- see also* medical care of slaves
- domestics, slave 191, 200, 218
- Dominica xii, 16, 38, 77, 96-7, 122 n., 210, 224, 249, 256-60
- Downing, Revd George 214
- Drescher, Seymour 5
- drivers, black 109, 111, 201, 202-3, 204 n., 215, 218, 219
- dropsy *see* diseases among slaves
- drought 23, 37, 66, 85, 117
- Dukenfield Hall plantation, Jamaica 32, 228, 280
- Dunn's Hole plantation, Jamaica 224
- Dutch and West Indian settlement 8-9, 11
- dysentery *see* diseases among slaves
- ecological change and sugar planting 13-14, 67, 81, 116, 213
- eddoes 73
- Edwards, Bryan 73-4, 205
- Egypt plantation, Jamaica 23-9, 32, 107, 112, 126, 132-6, 139, 150-4, 168-70, 174, 178, 194, 197-9, 282
- emancipation of slaves:
- preparations for by British government 3, 55-6, 273-6
- sequel to in British West Indies 141-3, 165, 186, 189, 233-60
- Enlightenment philosophy and slavery 3-4, 214-15
- environment *see* ecological change
- Essequibo *see* Demerara/Essequibo
- Estridge plantations, St Kitts 77
- Falmouth, Jamaica 84-5, 255
- family:
- ex-slave 184, 245, 246, 252

- family [*cont.*]:
 slave 111, 158, 171-2, 176-7, 188-9, 245-6
see also children; infants; sexual relations
- Farquhar, Dr George 131
- Fearon, R. W. 264 n.
- feeding of slaves 18-29, 37, 46, 105-18, 157-8, 162, 204, 207-8, 247-8, 263, 272, 284-5, 286-8
 and demography 24-6, 148-9, 155
 seasonality in food supply 22-8, 148-9
see also food gathering; food growing
- Ferry pen, Jamaica 280
- fertility, slave 35, 94, 136-41, 165-89
 family and 171-7, 179-84
 lactation and 171-2, 177-9
 seasonality in 25-6, 168-9
 work regime and 170, 179-82, 186-8
- fever:
 among whites 44
see also diseases among slaves
- fish 20-1, 24, 76, 105-8, 188-9, 202, 222-3, 284-5, 287-8
- Fitzherbert, Sir Henry 51, 93, 158, 203
- Fitzherbert, William 215
- Fitzherbert plantations, Jamaica 154
- Fleming, Vice-Admiral 204
- Flint River plantation, Jamaica 224
- flogging *see* punishment
- flour *see* wheat flour
- fodder *see* grass
- food gathering 25 n., 112, 189
- food growing 18-22, 63-78 *passim*
see also corn, Guinea; corn, Indian; provision grounds; yams
- food, prices of 20, 46, 66, 116 n.
- Foster, Colonel Thomas 214
- French planters 259-60
- French West Indies 9, 25 n., 210-12
see also Guadeloupe; Martinique; Saint-Domingue
- Frontier plantation, Jamaica 113, 139, 176, 280
- Gale's Valley plantation, Jamaica 281
- Gladstone, John 54, 59
- Gladstone, Robertson 200, 258
- Good Hope plantation, Jamaica 228-9, 280
- Good Hope plantation, Trinidad 98 n., 107, 281
- Goulburn, Henry 93-4, 203
- Grainger, Dr James 162
- Grand Bras plantations, Grenada 123, 126
- Grange Hill plantation, Jamaica 21, 48 n., 93, 113, 229, 281
- grass 64, 86-98 *passim*, 192-3
- grass gathering 17-18, 76, 157-9, 273
- grass, Guinea 86-7
- Great Britain:
 economic development 1, 7, 262-3, 269
 government and slavery 3, 55-6, 202-3, 219, 221
 government and West Indies 6, 42-3, 235, 240-1
 levels of material consumption in 263, 277-8, 286-8
see also sugar, prices and supplies of
- Green Park plantation, Jamaica 281
- Grenada xii, 38, 91, 97, 114 n., 136-7, 146-7, 210, 223-4
- Guadeloupe xii, 12
- Guinea corn *see* corn, Guinea
- Guinea grass *see* grass, Guinea
- Haiti xii, 275
see also Saint Domingue
- Hancock, John 163
- Hanover parish, Jamaica 84-5, 220, 227, 230-1, 254
- height *see* slaves, stature of
- herrings 47, 105, 245
see also fish
- Higman, B. W. 136, 177

- holidays for slaves 17, 112-15, 167, 169, 200, 232, 247, 252, 273
 Horlock, Dr Joseph 161
 horsebeans 19, 21, 65, 108
 horses *see* livestock
 hospitals 156, 160-5
 hot houses *see* hospitals
 hurricanes 17, 20, 23 n., 41-2, 58, 62, 71, 109, 114, 213, 283

 indentured labour 10, 240-1, 253
 India, as source of sugar 55, 63 n., 238
 infants, slave:
 mortality of 36, 130-1, 155-6, 164-5, 169 n.
 treatment of 30-1, 162-3
 see also children, slave
 influenza *see* diseases among slaves
 inoculation against smallpox 164, 209
 see also diseases among slaves, smallpox
 Ireland 268
 Irwin plantation, Jamaica 154, 228, 280
 Island plantation, Jamaica 152, 154, 158, 214, 280

 Jackson, Homer 161
 Jamaica xii, 54, 58
 amelioration and its results in 190-232 *passim*, 271-5
 and American War of Independence 41-2, 283
 demographic trends among slaves in 94, 121-89 *passim*, 221-32 *passim*, 272, 285-6
 emancipation and its results in 144-5, 165, 189, 234-60
 and Revolutionary and Napoleonic Wars 90-1, 260
 settlement of 7, 10, 12, 83-5
 slave feeding in 19-29, 37, 105-16, 204, 222-4
 slave imports to 32, 91
 slave rebellion in 211-12, 216-32, 237, 258
 sugar mills and processing in 99-104
 sugar planting under slavery 6-7, 48, 80-95, 190-207, 261, 264-8, 271-3
 work requirement of sugar plantations in 80-95 *passim*, 103
 see also individual parishes, plantations, and towns; Maroons; Thistlewood, Thomas

 Kennion, John 152
 Kensington plantation, Jamaica 220, 231 n.
 kidney beans *see* pigeon peas
 Kingston, Jamaica 83-4, 216, 226 n., 254, 265 n.
 Kiple, K. F. 284-5
 Knibb, Revd William 243

 lactation *see* fertility, lactation and
 Laing, Malcolm 264 n.
 laws regulating treatment of slaves 2, 110-15, 167, 203-5, 211-12, 223, 273-5
 Leeward Islands 39, 191, 207, 210, 216
 demography of slaves in 123, 138-41, 158, 189
 feeding of slaves in 19-21, 37, 108
 settlement of 6-12
 sugar planting in 48, 91, 192, 194, 242
 see also Antigua; Barbuda; Montserrat; Nevis; St Kitts
 leprosy *see* diseases among slaves
 Lewis, Mathew 112, 224
 livestock:
 of planters 17, 61-101 *passim*, 199-200; cattle 23, 200; *see also* pens
 of slaves 115, 254, 284-5, 288; cattle 167, 200, 284; horses 277 n.; pigs 284

- livestock (*cont.*):
 of ex-slaves: horses 238, 244, 255, 277
 Long, Edward 87, 122, 130, 152, 155, 212, 266
 Longville plantation, Jamaica 113
 lumber 44, 46, 52-3
- maize *see* corn
mal d'estomach see diseases among slaves, dirt-eating
 Manchester parish, Jamaica 84, 180-3
 mango 109
 manumissions 272
 manuring 15-16, 60-98 *passim*, 248, 250
 Maroons, of Jamaica 12, 27, 231
 Martin, Samuel 62, 73
 Martin Byam's plantation, Antigua 74 n., 228, 281
 Martinique 12, 210
 mating *see* family, slave; sexual relations
 Mauritius 43
 meat 244, 246, 287-8
 medical care of slaves 46, 160-5, 184-5, 207
 Melville Hall plantation, Dominica 280
 Mesopotamia plantation, Jamaica 52, 92-3, 95 n., 107, 139, 146-8, 168-9, 199, 214 n., 280
métayage 256-60
 migration, by ex-slaves in West Indies 235-8, 251
 mills, for crushing sugar-cane 9, 71, 99-101, 187, 268-70
see also steam engines
 miscarriages 25, 169, 187
 miscegenation *see* sexual relations, between slaves and whites
 missionaries 74, 185, 189, 214, 220-1, 230, 238, 243, 274
 Montego Bay, Jamaica 84-5, 88, 220, 231
 Montpellier plantation, Jamaica 113, 174-5, 252
 Montserrat xii, 8
 after emancipation 251
 demography of slaves on 32, 142-5, 186, 225
 feeding of slaves on 107
 sugar planting on 79-80, 234
 mortality, slave 24-5, 121-36, 180-1, 184-8
 of Africans in seasoning 124-9
 epidemics 141, 143
 and feeding 24-5, 148-9, 155
 seasonality in 24-5, 149-51, 225-7
see also American War of Independence; diseases among slaves; infants, slave, mortality of
- Mount Carmel plantation, Jamaica 280
 Mount Hindmost plantation, Jamaica 228, 281
 Mountravers plantation, Nevis 32
 mules *see* livestock, of planters
 muscovado *see* sugar, types of
 mutilation 204-5
 myalism 217-18, 221
- Nevis xii, 8, 27, 54, 229
 after emancipation 251
 demography of slaves on 142-5, 225
 feeding of slaves on 21, 106-7
 slave imports to 32
 sugar planting on 79-80, 234, 264 n.
- New Found River plantation, Jamaica 107, 154
 New Grant plantation, Trinidad 281
 Newton plantation, Barbados 32, 106, 146-7, 154, 176 n., 228, 280
 night work:
 in sugar manufacturing 17, 90, 104, 159, 192, 250-1
 out of crop 18, 151

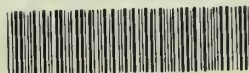
- North America *see* British North America; United States
 Nugent, Lady Maria 268
- occupations *see* slaves, occupations of
 Ottley, G. W. 66-8
 overseers *see* white employees on sugar plantations
- Parham plantations, Antigua 32-4, 50, 64-73, 107, 117-18, 126, 132-6, 138, 146-8, 150-1, 154, 168-9, 174-5, 178, 192, 198, 223, 228, 280
 Pennant plantations, Jamaica 154
 Penrhyn, Lord 200
 pens, cattle 49, 87-95 *passim*, 170
see also livestock
 Perrins plantation, Jamaica 139, 174-5, 178, 228-9, 280
 Phillipsfield plantation, Jamaica 89
 pigeon peas 22, 78
 Pinckard, Dr George 185 n.
 Pine plantation, Barbados 223 n.
 Pinney family of Bristol 54 n.
 Pinney, John 264 n.
 plantains 20, 22, 24, 63, 109, 112, 114, 116, 254
 plantations *see* sugar plantations
 planters *see* sugar planters
 planting *see* coffee planting; cotton planting; sugar planting
 Pleasant Hill plantation, Jamaica 89, 107, 154
 plough, use of in sugar planting 15, 71-4, 78-80, 82-3, 97, 212, 250
 Plummer and Wilson, Messrs 57-8
 population *see* demography
 Portland parish, Jamaica 84, 253-4
 Port Royal parish, Jamaica 84, 180-3
 potatoes 19, 65 n., 66, 73, 76, 111
 sweet 64, 118
 Price, Sir Rose 94
 prices *see* fish; food; lumber; slaves; sugar; sugar plantations
 profitability *see* sugar planting
 prostitution 26, 171-2
 provision grounds 18-23, 65, 76, 79, 81, 108-18, 223-4, 253-5, 284-6
see also food growing
 punishment 26-9, 31, 199, 201-6, 229-30, 273-5
- racial attitudes and theories 1, 36, 278
 Ragatz, L. J. 4
 Ramsay, Revd James 76, 185 n.
 ratoons 15, 60-98 *passim*, 252
 rats, on Grenada 97
 rebellion by slaves 152, 211-12, 216-32, 237, 271-6
 registration returns of slaves 120, 130, 195 n., 219, 270-2
 religion among slaves 211-12
see also missionaries
 Renny, Robert 130
 Revolutionary and Napoleonic wars 43, 77, 80, 201, 213
 effects in Jamaica 90-1, 260
 rice 24, 37, 77, 244
 Robinson, John 264 n.
 Rodney, Admiral Lord 210
 Romney plantation, St Kitts 106-7, 118, 130-1, 138, 146-7, 154, 158 n., 169, 174-5, 178, 228, 280
 Rose Hall plantation, Jamaica 224, 228, 281
 Roughley, Thomas 92, 151, 157, 179, 202
 rum 9, 22, 28, 40, 42, 45, 190, 245, 253, 258
 runaways 27-9, 109, 195-6, 198-9, 204-6, 216, 228 n., 247-8
- St Andrew parish, Jamaica 84, 255
 St Ann parish, Jamaica 84, 88
 St Catherine parish, Jamaica 84, 88, 225 n., 252
 Saint-Domingue 2, 12, 43, 90, 170 n., 211, 218, 224, 229
 St Dorothy parish, Jamaica 84, 255 n.
 St Elizabeth parish, Jamaica 83, 84

- St James parish, Jamaica 84, 88, 220,
227, 230-1, 250, 252
- St John parish, Jamaica 83, 84, 225 n.
- St Kitts xii, 8, 15, 224, 228-9
American War of Independence
and 40-1
demography of slaves on 132-5,
142, 159, 186, 225
emancipation's results on 236, 251
feeding of slaves on 20, 76-8, 105-
8, 116, 248
sugar planting on 74-80, 82
see also Romney plantation, St
Kitts
- St Lucia xii, 43, 226, 256-60
- St Mary parish, Jamaica 84-5
- St Thomas-in-the-East parish,
Jamaica 83, 84, 87-9, 237, 253
- St Thomas-in-the-Vale parish,
Jamaica 83, 84, 89, 225 n.
- St Vincent xii, 38, 58, 91, 97, 107,
236
- Savanna-la-Mar, Jamaica 84, 113
- Schaw, Janet 15
- Scotland 105, 152, 160
- Seaford, Lord 258
- seasonality in food supply 22-8
see also fertility, seasonality in;
mortality, seasonality in
- seasoning *see* mortality
- Seawells plantation, Barbados 154,
176 n., 228, 280
- sex ratios in slave populations 31-4,
166, 270
- sexual relations:
among slaves 25-6, 34, 150, 168-9,
171-7, 182-4
see also family, slave
between slaves and whites 26, 109,
171-7, 182-4, 282
- share-cropping 256-60
- Sheridan, R. B. 284-5
- shipping in West Indian trade 40-3
- slavery:
and Enlightenment philosophy 3-
4, 214-15
historical writing on 4-6
slaves, in British West Indies:
Africans and Creoles 10, 25, 110-
11, 124-88 *passim*, 194-6, 205-8,
212, 216-32, 246, 270-2, 285
euphemisms for 1-2
occupations of 72 n., 156-9, 190-1,
193-4, 207-8, 226-9
prices and valuations of 10, 34, 45,
209-10, 256
stature of 195-8
see also children; coloured (mixed-
race) slaves; demography;
diseases; domestics; drivers;
family; feeding; fertility; holi-
days; infants; livestock; medical
care; mortality; provision
grounds; punishment; rebellion;
runaways; sex ratios; sexual
relations; theft; watchmen;
women; work
- slave trade:
between colonies 56, 121-3
from Africa 1-3, 5, 10-11, 31-3,
43-5, 121-3, 208-10, 214-15,
263; demographic results in
British West Indies 124-9; and
epidemiology 141, 143, 148
- Sloane, Sir Hans 185 n.
- smallpox *see* diseases among slaves
- Smith, Adam 3
- Smith, John 274
- Smith, Sir Lionel 237, 259
- Society for the Propagation of the
Gospel 35, 177, 203, 205
see also Codrington plantations,
Barbados
- Spanish colonists and slavery 33, 204
- Spring plantation, Jamaica 32, 107,
113, 264, 280
- Springfield plantation, Jamaica 92,
95 n.
- Stapleton plantation, Nevis 106, 138,
154, 280
- stature *see* slaves, stature of
- steam engines 52, 93, 98 n., 100-1,
241-2, 251
- Stephen, James 273

- sugar:
 manufacture of 9, 16-17, 71, 99-104, 195 n., 241-2, 258, 268-70
 prices and supplies of in Great Britain 12-13, 38-60 *passim*, 210, 233-4, 238-41, 278
 types of 13 n., 63, 74, 102 n., 241
 sugar cane, varieties of:
 Bourbon 64, 71, 87
 Otaheite 64, 69-71, 77, 80, 87, 90, 100
 Ribband 87
 Violet 87
 sugar plantations, British West Indian:
 establishment of 8-13
 investment and maintenance expenditure on 51-3
 prices of 50-2
 size of 193-4
 sugar planters, British West Indian:
 and anti-slavery 1-3, 208-15
 in adversity (1763-1834) 38-60
 policies on slave breeding and maintenance 29-37, 208-15
see also absenteeism; sugar planting
 sugar planting, British West Indian:
 annual routine of 9, 14-18
 profitability of 47-60, 65-9, 75, 78-9, 93-5, 108, 212-15, 264 n.
 technical innovation in 5, 58, 61-118, 261-73 *passim*
 sweet potatoes *see* potatoes, sweet
 taxation, in British West Indies 46, 245
 Taylor, William 156, 204, 231, 254
 technical innovation:
 by United States planters 4-6
see also sugar planting
 tetanus *see* diseases among slaves
 Tharp plantations, Jamaica 154
 theft:
 by slaves 26-9, 75, 109, 199-200, 211, 250
 by white employes 104
 Thistlewood, Thomas:
 and Jamaican sugar planting 213-14, 267-8, 282-3
 and slave breeding and maintenance 30-1, 155-6, 164-5
 and slave clothing 152
 and slave demography 126, 130-4, 139-40, 150-1, 153, 159 n., 168-70, 174, 178, 188-9
 and slave discipline 26-9, 198-9, 204-5, 208 n.
 and slave feeding 23-7, 158
 and slave livestock 200
 and slave medicine 161-2, 164-5
 and slave rebellion 216-18
 and sugar milling 100, 194, 268
 timber *see* lumber
 Tobago xii, 38, 43, 97, 122 n., 174-5, 224, 266
 Trelawny parish, Jamaica 84, 88-9, 227, 250, 254-5, 285-6
 Trinidad xii, 6, 43, 48, 107-8, 111, 139, 195, 199, 222, 225
 after emancipation 235-6, 239-42, 247-50
 sugar planting under slavery 91, 98, 101
 Tudway, Charles 65 n.
 Tudway, Clement 65 n., 67
 Tudway, John Payne 67-8
 Tudway, Mrs Rachel 30, 37
 Tull, Jethro 82
 Turners Hall plantation, Barbados 21, 28, 32, 106, 122, 154, 176-7, 215, 228, 280
 United States:
 slave demography in 166-84
 slavery and 1, 4-6
 trade with British West Indies 42-4, 248
 vaccination against smallpox 164, 226 n.
 venereal disease *see* diseases among slaves

- Vere parish, Jamaica 85-6, 88, 95,
109, 231-2, 252-4
- Vineyard pen, Jamaica 113
- Vreedenhoop plantation, Demerara
176 n., 228, 281
- Waddell, H. M. 230
- Wales plantation, Demerara 228, 281
- Waltham plantation, Grenada 97,
107, 114 n., 126, 139, 202, 280
- warfare and British West Indian
plantations 23 n., 40
see also American War of Inde-
pendence; Revolutionary and
Napoleonic wars
- watchmen 27-9, 191, 200
- weights and measures 283-4
- West Indian 'interest' *see* sugar
planters
- Westmoreland parish, Jamaica 83,
84, 102, 151, 217-18, 226-7, 232
- wheat flour 37, 77-8, 244, 247-9
see also bread
- whipping *see* punishment
- white employees on sugar planta-
tions 40, 44, 46, 76, 83, 104, 157,
176, 201, 204, 207, 244, 258, 263-
76
see also Thistlewood, Thomas
- white population in British West
Indies 8-12, 18
- Wilberforce, William 229
- Williams, Eric 5
- Williams, Tom 214
- Williams plantation, Antigua 73
- Williamson, Dr John 150, 202
- windmills 17, 71, 99
see also mills for crushing cane
- Windsor plantation, Jamaica 92
- women:
ex-slave 245, 252
slave 215, 250; mortality of, com-
pared with that of men 133-6;
punishment of 199, 202-4, 273-
4; treatment of when breeding
30-1, 155-6, 163-7, 186-8
see also fertility, slave; sex ratios in
slave populations; sexual rela-
tions
- work regime of sugar estates 14-18,
61-104 *passim*, 222-32, 249-53
see also fertility, slave, work regime
and
- worms *see* diseases among slaves
- Worthy Park plantation, Jamaica
32, 48, 89, 94, 128, 148, 154, 202,
280
- Wright, William 162
- yams 19, 22-3, 64-78 *passim*, 109-18
passim, 254
- yaws *see* diseases among slaves
- York plantation, Jamaica 130-6, 139,
146-7, 150, 168, 228, 280

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